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In This Issue

New Bascule Span Replaces Two Old Swing Spans.....Page 279
A description of the Scherzer rolling-lift structure which carries tracks of the Texas & Pacific and the Southern Pacific over waterway near New Orleans.

The Press on Government Ownership of Railroads..... 284
With abstracts from comment by newspapers throughout the country on a recent Railway Age editorial this article shows public sentiment strongly favorable to private ownership.

Test Run Made with L. & N. E. 2-8-2 Locomotive..... 289
E. C. Poultney outlines results of experimental runs in which this British express locomotive developed 2,100 hp. and operated at unusually high speeds.

EDITORIAL

The Administration and the Railways..... 277

GENERAL ARTICLES

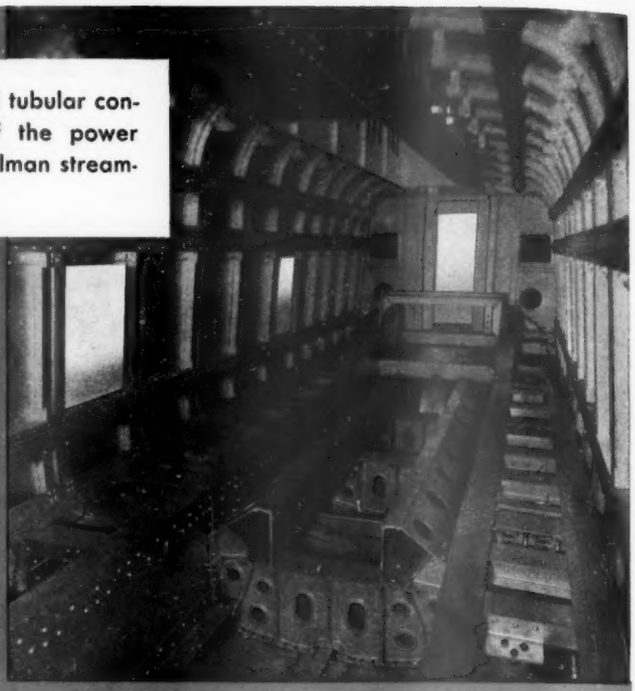
New Bascule Span Replaces Two Old Swing Spans..... 279
Pooling of Grain Elevators Suggested..... 282
The Press on Government Ownership of Railroads..... 284
Freight Car Loading..... 287
Personal Interviews Aid in Promoting Safety..... 288
Test Run Made with L. & N. E. 2-8-2 Locomotive, by E. C. Poultney..... 289
President Giving Attention to Railroad Situation..... 291

ODDS AND ENDS..... 291

NEWS 292

REVENUES AND EXPENSES OF RAILWAYS..... 298

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service



Chassis and tubular construction of the power car of a Pullman streamlined train.

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The Administration and the Railways

The *Railway Age* quoted prominently in its issue of September 1 an editorial entitled "Railroad Reform Lags" by Doctor Raymond Moley, which appeared in the August 25 issue of the magazine "Today." This was done because of the probable significance of the expression of such views by one of President Roosevelt's closest advisers.

Mr. Roosevelt accurately stated the railroad situation and problem in his speech at Salt Lake City on September 17, 1932, and advocated definite policies for dealing with them. There are reasons besides Doctor Moley's editorial for believing that the President has not changed his mind regarding the railroad policies that should be adopted. During most of the time since his Salt Lake City speech the railway situation has been improving. Throughout the last five months it has been deteriorating. It is as bad now as it was two years ago.

The railroads are confronted with a combination of difficulties, some of them new. Their operating expenses have been sharply increased within recent months by NRA advances in prices, wage advances and the recent pension legislation, which has been appealed to the courts. On an annual basis the increases in expenses due to NRA and restoration of wages are estimated at $293,000,000 in the petition for an advance in freight rates presented to the Interstate Commerce Commission. Freight business has declined to relatively the lowest level since May, 1933, and is now relatively as small as in December, 1932.

Railway Employment Declines

The *Railway Age* predicted, when the pension legislation was passed, that, in view of other unfavorable developments that were occurring, it would be followed immediately by a reduction of railway employment. This prediction has been fulfilled. In June the number of railway employees (excluding switching and terminal companies) was 1,054,426, an increase over June, 1933, of 96,894. In July, contrary to the usual seasonal trend, it declined to about 6,500 less than in June, and undoubtedly the decline is continuing. Railroad buying from the durable goods industries, was almost three times as large in the first half of 1934 as in the first half of 1933, owing to government loans and increases in net operating income. Although still being somewhat supported by expenditure of the balance of government loans, it also is declining.

Using Railways to Help Recovery

The railroads, because of their magnitude and character, could and should be made one of the principal agencies of economic recovery. Significant facts were given by Donald R. Richberg in his recent report to the President as Executive Secretary of the Executive Council regarding the comparative rapidity with which government railway loans have been utilized to give employment. The use of government public works money is divisible between "federal" and "non-federal" projects. The former consist of projects directly executed by the federal government. Non-federal projects include those for which loans are made to state and local governments and private industries such as the railroads. "In the non-federal classification," said Mr. Richberg, "railroads, having between one-fourth to one-fifth of non-federal allotments, have accounted for over 60 per cent of non-federal expenditures. 48 per cent of all railroad money has been spent and 53 per cent of man-hours used, in comparison with 8 per cent of money and 7 per cent of man-hours in other non-federal projects."

In his Salt Lake City speech Mr. Roosevelt said: "While I would do everything possible to avert receiverships which now threaten us, I seek to bring the operating balance sheets of the railroads out of the red and put them into the black." This is what is essential to make the railroads an important influence for economic recovery. During depression they inevitably increase their employment and buying as their income in excess of fixed charges increases, and as inevitably reduce their employment and buying as their income for paying fixed charges declines. Economic theorists

and labor leaders may claim that security owners and managements should voluntarily reduce fixed charges to maintain employment, wages and buying, but this is never done. Fixed charges are reduced only through bankruptcy or with surplus earnings used to reduce debts and interest. When railways are approaching bankruptcy they always retrench. That is why many are again retrenching now. It is what, within a few months, has changed the railways from an asset to a liability in the program of economic recovery.

Higher Freight Rates—Causes and Effects

Confronted with a new and serious emergency, the railways have petitioned for advances in freight rates aggregating $170,000,000. It is said this would interfere with the revival of business. It but follows, however, the example set by other industries, including those from which the railways buy, in advancing prices to cover increased wages and other costs. It is said an advance of rates would do the railways no good because it would drive traffic to competing carriers. No doubt railway officers are as good judges of what would be the effects as anybody else. Traffic that went to other carriers would not have to pay the advance in rates. Traffic that stayed on the railways would thereby show that it could bear the advance.

The real trouble with an advance in freight rates is that it would be an attempt to deal with effects instead of causes. The necessity for seeking higher freight rates is due to the fact that the causes which necessitated them have not been attacked by those who alone can effectively attack them. Congress passed an emergency transportation act and created a Co-ordinator of Transportation ostensibly to effect railway economies. Under pressure from labor leaders, however, Congress included provisions prohibiting reductions of employment which rendered impossible the most important economies ostensibly intended.

Mr. Roosevelt, in his Salt Lake City speech, emphasized that the subsidization and freedom from regulation of competing carriers had "unbalanced the system of things" in the field of transportation, and, especially with reference to highway carriers, said "we must not give them any unfair competitive advantages over the rails." The Co-ordinator was directed to investigate and make recommendations regarding competitive transportation. He has made some enlightening reports and a good deal of needed state legislation has been passed, but the railways, because of artificial disparities that have continued and increased between their operating costs and regulation and those of other carriers have been unable to recover a vast amount of traffic which, from every standpoint, they are economically the best agency to handle.

The Administration's Railroad Policy

Congress and numerous state legislatures will be in session again within a few months. "The administration has a railroad policy," said Dr. Moley, "and those charged with carrying it out should give careful consideration to the complaints of the railroads." The administration's railroad policy is, presumably, that enunciated by Mr. Roosevelt in his Salt Lake City speech. It is, therefore, a policy requiring action not only by the Co-ordinator of Transportation, but also by the President, Congress and state legislatures. The federal government can and should set an example which would be influential with the states. This example should include repeal of the labor provisions of the Emergency Transportation Act to make possible effective efforts by the Co-ordinator and railway managements to accomplish economies; legislation for comparable interstate regulation of railways and water carriers; and legislation to impose reasonable tolls for the use of waterways.

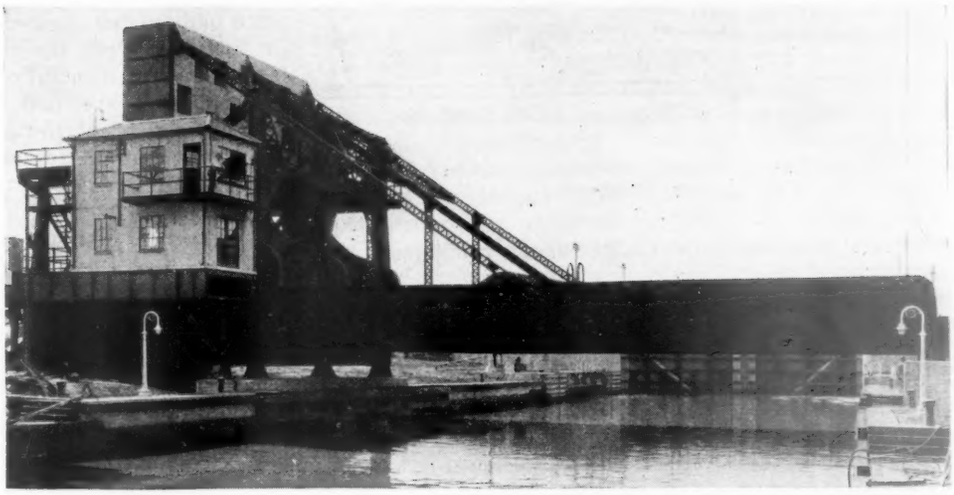
Repeal of the long-and-short-haul section of the Interstate Commerce Act is among the things necessary to give the railways equality of opportunity with their competitors. There is needed much state legislation to withdraw subsidies from highway carriers and impose the same requirements for maintenance of service and safety of operation that are imposed upon the railways. No other expenditure of public money could be provided for which would contribute more directly to public safety and employment than for the extensive elimination of railway-highway grade crossings.

"The Problem of Each and Every One of Us"

No other great economic problem has been within recent years so neglected by the federal and state governments when it has not been harmfully dealt with by them, or so harmfully dealt with by them when it has not been neglected, as the railroad problem. The reference made by Dr. Moley to government ownership in the editorial quoted last week indicates, and there are other reasons for believing, that President Roosevelt is opposed to government ownership. Quotations from the press published elsewhere in this issue indicate public sentiment is strongly opposed to it.

The President's railroad program enunciated at Salt Lake City, for government loans to tide the railways through their present difficulties, and legislation to help "bring the operating balance sheets * * * out of the red and put them into the black," affords the means of avoiding government ownership. It is necessary for the protection of securities which, as Mr. Roosevelt then emphasized, are owned by "the people throughout the country who have a savings bank account or an insurance policy;" for maintaining and increasing railway employment; and for increasing railroad buying, which is one of the principal essentials to revival of business and employment in the durable goods industries.

We hope and believe the administration in the near future will grapple energetically and constructively with the problem of the railroads, which, as Mr. Roosevelt said at Salt Lake City, "is the problem of each and every one of us."



The Harvey Canal Rolling-Lift Span, Looking Toward the New Locks

New Bascule Span Replaces Two Old Swing Spans

Scherzer rolling-lift structure carries tracks of Texas & Pacific and the Southern Pacific over waterway near New Orleans

A CHANGE in the location of a section of the Harvey canal, near New Orleans, La., led to the construction of a double-track Scherzer rolling-lift bascule bridge to take the place of two movable-span railroad bridges over the old canal. Although most of the substructure work for the new bridge was done in the dry, before the new canal section had been excavated, the project embraced a number of foundation problems that required special treatment.

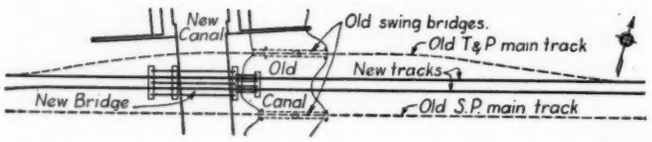
This bridge carries a track of the Texas Pacific-Missouri Pacific Terminal, used by trains of the Texas & Pacific and the Missouri Pacific, and a track of the Morgan's Louisiana & Texas Railroad & Steamship Company, used by trains of the Southern Pacific Lines. It was built to cross the approach to new locks, constructed by the government to connect the Mississippi river with the Harvey canal, a waterway previously operated as a private enterprise but which was acquired and enlarged by the government as a link in the Louisiana-Texas section of the Intracoastal canal, from New Orleans to Corpus Christi, Tex., authorized by acts of Congress dated March 3, 1925, and January 21, 1927.

To facilitate construction and minimize interruptions to navigation, in the canal, the new locks were constructed just west of the existing waterway, with the result that the south approach to the new locks lies to the west of a point where the old canal was crossed by the single-track lines of the T.P.-M.P. Terminal and the Southern Pacific, which extend to the west bank of the Mississippi river, a few miles east of Harvey, where each line has ferry slips for the transfer of cars across the river into New Orleans. The two lines were carried across the old canal on parallel single-track, deck-girder swing spans about 100 ft. center to center. Because of this change in the location of the waterway and because the new canal section is wider than the old one, it was necessary to replace these old bridges.

The Congressional acts above mentioned provided for the reconstruction of the railway bridges at the expense of the government, but in discussing plans and procedure with representatives of the railways, Major Malcolm Elliott, district engineer, Corps of Engineers, suggested that the railways agree to a joint bridge over the relocated canal, to be built in a location midway between their existing lines. Accordingly, a three-party agreement was entered into between the government and the two railroads, under the terms of which the T.P.-M.P. Terminal agreed to prepare plans for and act as contractor in the construction of a double-track bascule bridge affording a channel with a 75-ft. clear horizontal opening and an 11-ft. vertical clearance over high-water level with the bridge in the closed position.

The clearance specified for the structure in its closed position involved the raising of the tracks of the two

The New Rolling-Lift Span, Looking South from the Locks



Sketch Showing How One Bridge Crossing of the Canal Serves the Two Railways

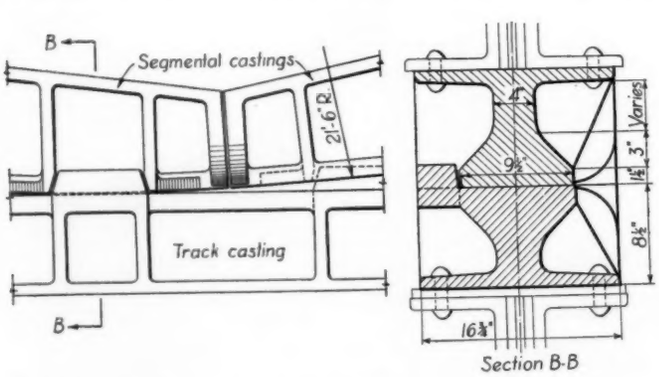
railways approximately seven feet at the bridge, and the adjustment of several highway grade crossings between the ends of the approach grades. As the railways are required to maintain and operate the bridge, they entered into a separate contract defining the terms for maintenance and operation during alternating 10-year periods.

The New Bridge

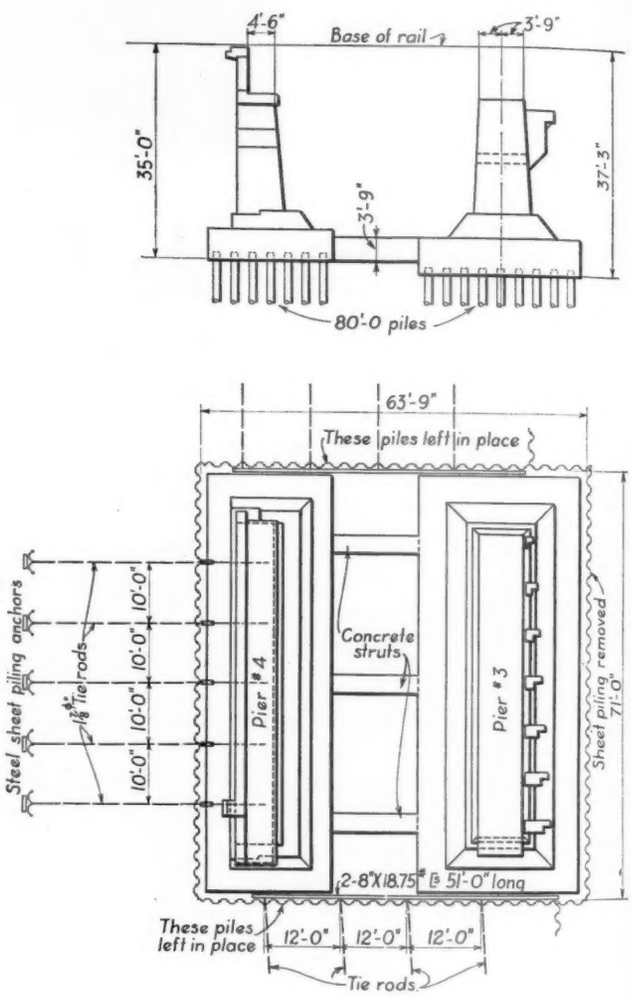
The new bridge, which was designed for Cooper's E-50 loading, in accordance with A.R.E.A. Specifications for Movable Railway Bridges, consists of a single-leaf, through-girder bascule span with an effective length of 91 ft., and approach spans of 33½ ft. and 40 ft. effective length, on the east and west, respectively. Both the bascule span and the west flanking span, which carries the track on which the movable span rolls, have girders between as well as outside the tracks. The east flanking span is a deck structure with two 36-in., 260-lb. CB-section beams under each track. The spans are supported upon two concrete channel piers and two concrete pier-abutments resting on piles 80 ft. long. The bridge is slightly skewed and the channel span is of sufficient length to provide for narrow walkways on each side of the canal, for use in handling water traffic. These are supported by the piers and are about five feet above the water. A bascule span was specified by the War Department to secure unlimited overhead clearance and after a consideration of several different designs, the rolling-lift type was selected as best meeting local conditions and other requirements.

The design of the superstructure departs from usual practice in the use of three main, segmental and track-span girders, this arrangement permitting a shallower bridge floor over the canal than would have been practical with a two-girder design. Among the most important elements in a rolling lift bridge are the castings that form the curved tread on the segmental girders and the corresponding castings of the track on the track-span girders. The design of these was influenced largely by the results of the tests on the bearing value of large rollers, made by Prof. Wilbur M. Wilson in the Materials Research laboratory of the University of Illinois. In spite of the greater load imposed on the center girders, the castings for the middle track and segmental girders were built to the same dimensions as those for the light or outside girders, but the castings carrying the heavier loads were constructed of a steel of higher strength than the cast steel specified in the A.R.E.A. specifications. The physical properties of the steel used in these castings are covered in the following clause of the specifications for the bridge:

"Specimens from the coupons (cut from central track and segmental castings) shall develop an ultimate tensile strength of at least 95,000 lb. per sq. in., a yield point of not less than 60,000 lb. per sq. in., an elongation in 2 in. of not less than 22 per cent, and a reduction of area of not less than 40 per cent."



Details of the Segmental and Track Castings that Take the Bearing Pressures of the Rolling Contact



Plan and Elevation of One Pier and One Pier-Abutment, Showing also the Large Cofferdam and the Anchorage Provided for It

The castings, which are riveted to the girders, are approximately nine inches high and those on the track-span girders are provided with teeth 22½ in. center to center, that engage recesses in the castings on the segmental girders. The girders are specially reinforced, primarily by stiffeners, to insure an effective distribution of the heavy concentrated load applied through the track and segmental castings. The main girders, segmental girders, and the counterweight frame of the bascule span are tied together by a truss in the plane of each of the three girders. Stiff portals and cross frames were also provided to insure the requisite rigidity of the movable structure in its different positions. Advantage was taken of the fact that it was necessary to make the track-span girders 10 ft. deep, by providing unusually deep floor beams (8 ft. back to back of flange angles) as

a means of providing ample security against swaying under the rolling load of the bascule span. Large gussets were also provided in the floor-beam connections.

The span is opened and closed by means of two 35-hp. electric motors, which are mounted in a machinery house over the tracks on the movable structure. These motors are connected through a train of gears to pinions that engage racks mounted on posts along each side of the track span. The control equipment is enclosed in a two-story operator's house located just south of the track span and supported on girders spanning between the west pier and the west pier abutment. This house also contains a 45-hp. gasoline engine that was provided as a standby unit for the operation of the bridge. Since the engine is stationary and the pinion shaft to which it applies power moves with the span, it has been necessary to transmit the torque through a swinging shaft with a sliding connection to the gears at one end of it.

The Substructure

Information based on borings and pile tests made by engineers of the War Department in connection with the construction of the canal locks was available before work on the bridge was started and served as a guide in the design of the bridge substructure. The underlying materials are of alluvial character to an unknown depth and consist, to the depths reached by borings, of layers of "soft clay," "blue clay," "clay streaked with sand," and thin layers of sand. The maximum load per pile was limited to 15 tons.

At the suggestion of the chief of engineers, United States War Department, to whom plans were submitted for review, special provisions were made in the construction of the bridge to provide resistance to a horizontal thrust of 5,580 lb. per pile on the foundation piles. These included the use of riprap as back fill behind the east pier abutment, the installation of reinforced concrete struts between the piers and the pier abutments, and subterranean anchors for the west pier abutment, consisting of tie rods secured to deadmen. However, in spite of these elaborate precautions some movement of the piers toward the channel developed after the bridge was completed and placed in operation.

The Interlocking Plant

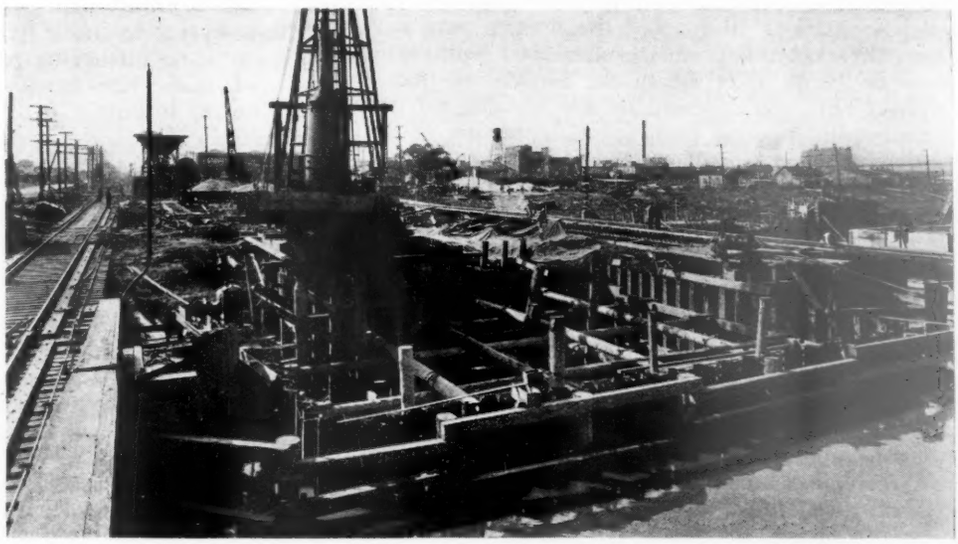
Train movements over the bridge are protected by a General Railway Signal electric interlocking, installed by the signal forces of the Texas & Pacific. The machine is a 20-lever Model 2 unit-lever type having 17 working levers and 3 spare spaces. Six derails, two switches, four rail locks and one bridge lock are operated by Model 5A switch machines, while there are three two-unit and two single-unit Model "D" color-light home signals and one search-light dwarf signal. The plant is completely protected by approach-routes and detector locking.

The interlocking machine, which is located in the operator's house, is interlocked with the bridge control and so arranged that the gas engine cannot be started or current turned on to operate the bridge motors until all derails protecting the bridge are opened, and the rail and bridge lock plungers are withdrawn. When the bascule span leaves its seat, the interlocking machine is locked electrically so that no lever can be moved until the span is properly closed and seated. The method of carrying cables across the canal is of special interest. When the canal locks were constructed, three three-inch fibre conduits were laid in the concrete floor of the locks for signal circuits and Okosheath cable was carried through these conduits for all circuits that cross the canal.

At the request of the War Department, the specifications for the substructure work required the construction of a single cofferdam enclosing both the pier and the pier abutment on each side of the channel, built of arch-web steel sheet piles driven a depth of 15 ft. below the bottoms of the footings. The contractor was also required to install tie rod anchors attached to the north and south cofferdam walls so that these portions of the cofferdam might be utilized later as parts of permanent bulkheads required at the sides of the canal adjacent to the bridge.

Because the new bridge was located half way between the operated tracks and only the east pier abutment fell within the limits of the old canal, it was possible for the contractor to do most of his work on dry ground and with little interference from train movements. The T. P. -M. P. Terminal track had already been supported on a timber trestle from the west end of the old railway bridge to a point west of the west pier-abutment of the new bridge before excavation for the piers was undertaken, to insure safety of operation. And the contractor, to facilitate his operations, elected to provide a timber pile trestle for the Southern Pacific track opposite the areas occupied by the new piers, as these trestles made it practical to use much lighter bracing in the cofferdams than would otherwise have been needed.

In the original cofferdam design, the walls were braced



View from East Side of Old Harvey Canal, Showing the Cofferdam for the East Pier and Pier-Abutment, the Pile Driver and the Concreting Plant. The Old Southern Pacific Draw Span Is Seen in the Left Foreground, and the Approach to the Old Texas & Pacific Swing Span in the Right Background

with two horizontal frames, built up largely of 12-in. by 12-in., and 14-in. by 14-in. timbers, but with 18-in. by 12-in., and 12-in. by 8-in. steel H-sections in the bottom frames for wales and cross struts, respectively, the steel cross struts being so located as to pass through the footings of the piers, where portions of them were encased in the concrete and left in the work. The struts of the top and bottom frames were braced together by means of vertical timber struts and diagonal rods to form trusses which were supported midway between the cofferdam walls by temporary pile clusters to which they were securely fastened. After the work was undertaken, this system of bracing developed excessive flexibility, due largely to the splices at the strut intersections, and it became necessary to replace the 12-in. by 12-in. struts by piles that served as continuous struts between the cofferdam walls.

Construction Procedure

The procedure in the construction of the cofferdams was as follows: After the excavation had been carried to a depth of about seven feet, the first bracing was framed and set up. Next, the sheet piling was set up and driven, after which the excavation was continued to a depth of about 10 ft., and the bracing was lowered. Then, the excavation was resumed and continued to a depth of 22 ft., after which the foundation piles were driven. This was followed by the framing and placing of the second bracing frame, the completion of the excavation, the cutting off of the piles and the placing of the concrete. Work done under the substructure contract included the driving of 45,000 lin. ft. of 80-ft. long leaf yellow pine foundation piles, and the placing of 2,400 cu. yd. of concrete and 80,000 lb. of reinforcing steel.

The movable structure was erected in the closed position, the main girders being placed by rolling them laterally on temporary bents from a position alongside the T. P.-M. P. Terminal track where they were unloaded from cars. All other parts of the bridge were erected with a locomotive crane. The concrete for the counterweight, totaling 200 cu. yd., was placed in one continuous run, the necessary support being provided by falsework resting on the track-span girders. The superstructure work involved the erection of 980,000 lb. of structural steel, 60,000 lb. of track and segmental castings, and 45,000 lb. of machinery.

Track Changes

It was necessary to revise the alinement of the two main tracks to a spacing of 19 ft., center to center, across the bridge, while the raise in grade of about seven feet was provided for by run-offs on 0.3 per cent grades that extended about a half mile east and west of the crossing. This work, together with the necessary adjustment of spur track connections within the limits of the work, required the placing of 50,000 cu. yd. of fill. Since little suitable material for such work was available in the immediate vicinity of the bridge, it was obtained from batture property of the T. P.-M. P. Terminal (between the Mississippi levee and river) approximately six miles west of the bridge. Dump cars loaded by a drag line machine were hauled to the work by railway locomotives. All work involved in securing the material, raising the tracks and adjusting the grades was done by railway forces.

To avoid interruption of railway operation and to insure an unyielding support for railway tracks across the old canal during the construction period and until the new fill had compacted, the War Department authorized the railways to drive a double-track timber trestle from the east end of the new bridge to the east bank of the old canal, as a part of the construction of approaches. This, necessarily closed the old canal to water traffic.

Slight Movement of Piers

While the old canal was being filled by dumping earth from this trestle, it was found that the east pier and pier-abutment had moved about one inch toward the new channel. Observations also indicated that the west pier and pier-abutment had moved slightly toward the east. At the time of this discovery preparations were being made by the War Department, under another contract, to pave the bottom of the new channel from the south end of the new locks to a point south of the new railway bridge, and the new canal had been unwatered for this work. This afforded a favorable opportunity for the institution of corrective measures, and rugged timber struts, laid across the channel and brought to bearing against the faces of the two piers just above the footings, prevented further movement. These timbers were left in place until the reinforced concrete pavement, which was increased to four feet in thickness under the bridge, could be completed. Although the railways have now been operating trains over the new structure for several months, no further movement of the piers has occurred.

Plans for the movable span were prepared by the Scherzer Rolling Lift Bridge Company of Chicago. All engineering work in connection with the design and construction of the new bridge was handled under the supervision of the engineering departments of the railway companies and under the direction of the War Department through the district engineers of the First New Orleans District during the incumbencies of Major R. F. Fowler, Lieut. Col. M. C. Tyler and Major Henry Hutchings, Jr. F. B. Ingersoll, civilian engineer for the War Department, and H. G. Lytle, terminal engineer of the Texas Pacific-Missouri Pacific Terminal, had charge of the actual construction. The substructure was built under contract by Thomas H. Brockman of New Orleans, while the Mount Vernon Bridge Company, Mount Vernon, Ohio, fabricated and erected the superstructure. We are indebted to E. F. Mitchell, chief engineer, Texas & Pacific, for the information presented above.

Pooling of Grain Elevators Suggested

WASHINGTON, D. C.

POOLING of railroad-owned grain elevators at each terminal market in the interest of economy is suggested in two reports prepared by J. A. Little, of Lincoln, Neb., of the research staff of Co-ordinator Eastman. They have been sent by Mr. Eastman to the Regional Co-ordinating Committees, as briefly reported in last week's issue, with a request that they be given early and careful consideration. Further inquiry into the matter by the western regional director is under way. The reports criticize the practices of the western railroads, particularly in leasing grain elevators to large shippers at rentals which Mr. Little finds grossly inadequate, but an appendix includes letters from a number of western railroad executives, defending the practice on the ground that it is necessary for competitive reasons, that the rentals are fixed by competition, and that the leasing of elevators to grain companies in a position to

control the routing of a heavy grain traffic tends to increase the traffic of the roads owning the elevators.

A questionnaire was sent to all railroads serving the principal markets and ports. "Broadly viewed," Mr. Little said, "the inquiry aimed to show the extent to which railroad-owned terminal elevators earned net returns on book value of the property and the extent to which the operation of the properties served line-haul grain traffic originating on the owning line consigned to terminal markets or resulted in securing line-haul movements beyond the terminal markets. As replies to our questionnaires were received, it became apparent that the rentals received by western railroads for the use of their terminal elevators were far from satisfactory measured by almost any standard."

As an example he showed that the 13 railroad-owned elevators at Kansas City, Mo., having a capacity of 37,081,110 bushels, in the period 1928-1932 produced a net income of $693,347, whereas the Baltimore & Ohio Locust Point elevator, having a capacity of 3,800,000 bushels, had a net income of $1,117,571. "Perhaps," he said, "that result may be ascribed to the use of elevator rental arrangements as a means of competing for the grain traffic at Kansas City." He also objected because, so far as he had been able to discover, no effort was made by the railroads to share increased storage earnings received from the federal government for holding Farm Board wheat. Mr. Little also reported:

> I see no reason why present inadequate earnings from railroad-owned elevators should continue. Taking the Kansas City situation as illustrative, we have the owners of the bulk of the elevators, the railroads, receiving inadequate revenues from that property and generally admitting that carrier competition is the cause of the difficulty. Suppose all such elevators were transferred to a new company formed by pooling the existing properties in the hands of a new corporation organized to own and operate such properties for all lines reaching Kansas City. With such complete control of terminal elevators the new management could fix rates for storage, cleaning, drying, mixing and other elevator services on a basis which would produce a fair return over and above all expenses. In my opinion such a pool operation of elevator facilities at Kansas City could effect substantial savings in line-haul revenues and switching costs in addition to realizing the direct objective of improving the earnings of such elevator properties.
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> Under present conditions the operator of the Santa Fe elevator in Kansas City, Kansas, buys grain coming in on all lines and the switching charge for moving the grain from the Burlington in North Kansas City, Mo., for example, to the Santa Fe elevator at the extreme southwestern edge of the Kansas City switching district is absorbed out of the line haul inbound rate. Outbound the process may be reversed and the Burlington again absorb a switching charge when the shipment goes forward to St. Louis or Chicago. Obviously, if the grain arriving via the Burlington in the foregoing illustration were stored in the Burlington elevator, that line would have received 100 per cent of the inbound and outbound revenues and the switching of two loads and two empty cars across the Kansas City switching district would have been avoided. In this connection it should be remembered that the reciprocal switching charges absorbed in my illustration reduce line haul revenues of the line making the absorption, and the amount received by the switching line seldom if ever equals the cost of the service.
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> When a car of grain is stored in a terminal elevator the warehouse receipt undertakes to re-deliver, on demand, the kind, quantity and grade of grain stored; not the identical grain, unless "special bin" storage has been arranged. If an elevator has on hand 100,000 bushels of No. 2 hard wheat and a car of 2,000 bushels of No. 2 hard wheat is received for storage, the holder of the storage ticket can only demand delivery of 2,000 bushels out of the grand total of 102,000 bushels of No. 2 hard wheat on hand. A "futures" contract to buy 2,000 bushels of No. 2 hard wheat at Kansas City on the May option is satisfied by transfer of a "storage ticket" covering 2,000 bushels of No. 2 hard in any terminal elevator at Kansas City which is approved by the board of trade rules governing such settlements. If a feed miller located on the Missouri Pacific in Arkansas wanted to take delivery of 2,000 bushels of No. 2 hard wheat bought on a futures contract, he could be given a storage ticket covering grain in the Santa Fe or Burlington elevator instead of an elevator on the Missouri Pacific, with the result that an empty Missouri Pacific car would be switched to the off-line elevator and the loaded car would be switched back to the Missouri Pacific.
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> If the plan I have in mind were followed, such difficulties could be avoided. All railroad-owned terminal elevators would be owned and operated by a new corporation, which I shall call for want of a better name Kansas City Pool Elevators, Inc. The financial objective would be to earn all operating costs (including moderate depreciation charges) taxes, insurance and a moderate return on value of the property. Warehouse receipts issued by the Kansas City Pool Elevator, Inc. would not designate the particular elevator in which grain was actually stored but would merely represent the right to re-delivery of the same quantity, kind and grade of grain at an elevator in the Kansas City switching district owned by the "Pool." Under such an arrangement 2,000 bushels of No. 2 hard wheat might be received on the Santa Fe and be unloaded in Santa Fe elevator A. With a tender of the storage ticket to secure re-delivery of grain to be loaded and shipped via the Burlington to Chicago, the Kansas City Pool Elevators, Inc. would deliver 2,000 bushels in a C. B. & Q. car at the C. B. & Q. elevator, if the kind, grade and quantity of grain were available in an elevator located on the outbound road-haul carrier. If the grain required were not available on the outbound road-haul line, delivery would be effected at the elevator requiring minimum loaded and empty car switching.
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> I can see no reason why the theory of "fungibility," involving a mass of grain of the same kind and grade in a single elevator, cannot be extended to the total mass of the same kind and grade of grain in all the elevators owned by the Kansas City Pool Elevators, Inc. with all the possible savings in switching operations I have indicated. It is certain that the practical operation of a plan would require high grade supervisory talent in the employ of the Kansas City Pool Elevators, Inc. and the active cooperation of carriers, grain merchandisers, and others concerned, but the advantages to be gained are great enough to justify all the effort necessary to the success of the enterprise.
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> Such a plan might be expected to produce additional advantages to the railroads. Under existing conditions lessees of railroad-owned elevators have an advantage over grain merchandisers who do not have such facilities. In a special report made by Interstate Commerce Commissioner James S. Harlan to the Director General of Railroads he found "that the control of these railroad properties by the six or seven lessees gives them an advantage and puts other grain dealers at that market at a disadvantage." Commissioner Harlan recommended that certain leases be surrendered so as to provide the "independent" receivers and shippers with the facilities necessary to operate under existing conditions. (Federal Trade Commission, Grain Trade, Volume III, page 101).
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> The Kansas City Board of Trade recognizes the disadvantage under which the "independent" grain dealer operates because of the "favorable" transit balances which the large operator commands in connection with "transit" privileges which attach to grain received from certain points on inbound lines from which grain is received and placed in storage in these terminal elevators, as compared with the small operator who pays a higher proportional rate in the absence of a stock of freight bills representing inbound grain from which he might "select billing" giving him a "balance" outbound less than the proportional rate and possibly equal to the balance available to the elevator operator. In this connection see the original brief of the Kansas City Board of Trade in the Grain and Grain Products case, I. C. C. Docket 17000, Part 7.
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> I am convinced that proportional rates and lower transit balances existing simultaneously from any market result in breaking down the proportional rate basis and in preferences between shippers which should not be continued. The pooling of all railroad-owned elevators would tend to broaden the ownership of grain in storage and reduce the evils of the existing rate structure by minimizing the opportunity for "selecting" lower transit balances to defeat proportional rates, even if a system of proportionals should not be prescribed to displace the existing system of transit balances and proportional rates existing simultaneously.
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> The recommendations I have made seem to be equally appropriate at other terminals, such as Omaha and St. Joseph on the Missouri river and at Chicago and Milwaukee, where railroad-owned terminal elevators are an important part of the total elevator capacity.
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> Under the proposed pooling of terminal elevators it would be possible largely to eleminate inbound switching of grain to off-line railroad-owned elevators and also minimize the outbound switching by delivery of the tonnage at elevators on outbound lines, without reference to the fact that the inbound tonnage might have been delivered at a pool elevator on an inbound line across the switching district from the house out of which the outbound shipment goes forward.
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> To my mind such a scheme would increase the possible advan-

(*Continued on page 288*)

THE PRESS ON GOVERNMENT O

THE *Railway Age* published in its issue of August 4 an editorial entitled, "Are We Drifting Toward Government Ownership?" This editorial has been widely quoted in the press, and a number of newspapers in all parts of the country have commented upon it in editorials. Almost without exception, and regardless of their party affiliations, the newspapers commenting have expressed themselves as against government ownership and in favor of government policies that will tend to prevent it.

It seems reasonable to assume that these almost unanimous expressions of the press are indicative of public sentiment. Quotations are given below from several typical editorials that have appeared.

Hampering the Railroads

(*Chicago Daily News*)

This year has seen a reawakening of railroad initiative. Lowered fares have lured more vacation tourists to the western playgrounds. Store-door deliveries of freight have answered the motor truck's challenge. For freight, as well as for passengers, train speed has been increased. More than a dozen new streamlined passenger trains will take to the rails before the year is ended, to outrace all competitors, airplanes excepted.

Yet no less an authority than the *Railway Age* believes that the railroads are in something like imminent danger of government ownership. According to the recent report of Joseph B. Eastman, federal co-ordinator of transportation, government ownership will be the ultimate solution of the railroad problem, because "private enterprise and capital will not be able to carry on successfully."

It is one thing for private enterprise to fail because of its own errors, and quite another thing for private capital to collapse because of obstacles placed in its path. Whether consciously or not, the trend of federal regulation under the New Deal has been to hamper the carriers' efforts to effect operating economies and to pile up new expenses against operating revenues.

Under the NRA codes important railroad supply items have advanced 21 to 63 per cent in cost. The compromise which wiped out the 10 per cent reduction of basic railroad wages is now costing the railroads $3,500,000 a month, and will reach a peak of $14,000,000 in added expense next April. The pension legislation passed by Congress recently involves $60,000,000 annually, as compared with $33,000,000 under the old pension systems. Meanwhile, rate increases are held in check by public opposition, and operating economies involving personnel layoffs have been ended by federal order.

While thus enmeshed in red tape, the railroads have borrowed more than $600,000,000 of federal funds to meet the exigencies of the depression and make necessary improvements. The bigger the government's stake in the railroads becomes, the stronger becomes the probability of government ownership. But before submitting passively to such a change, taxpayers should consider the deficits of the Canadian National railroad system; railroad labor should consider the earnings and hours of postoffice employees, and shippers should recall the inefficiency of service before the roads were turned back to private operation in 1920.

The *Railway Age* believes that if the government takes the railroads, many other industries also will be taken over. That is one more reason why the railroads should not be nationalized.

The Railways and Financing

(*Macon, Ga., Telegraph*)

Government ownership would immediately add a million names to the government's already entirely too large pay roll, is urged, and there would be complications about the state and local taxes now paid in such large amounts by the railroads. * * * Unless traffic and gross earnings largely increase, wage earnings must come down after April first of 1935, is urged. Long and short-haul section of the Interstate Commerce act must be modified, and subsidies should be abolished for competing carriers, and demand is made for their regulation just as the railroads are now regulated.

The entire problem is expressed, the *Age* thinks, in unwarranted increases of operating expenses through government direction, and the diversion of traffic, and the failure to increase freight rates on all items that would not be driven to other modes of transportation.

The private investors of this country have twenty-six billion dollars tied up in railroads; therefore the problem of their salvation is vital.

Just Warning Us

(*Rockford, Ill., Register-Republic*)

"'It is far from certain that in a comparatively short time the American people will not find that government ownership of railways is the most important question confronting them," says the *Railway Age* in an editorial.

It is pointed out that the immediate effect would be to subject the government to an annual loss of $650,000,000 to $850,000,000, with an increasing deficit as the number of employees and general operating expenses inevitably grew.

"Presented with such an issue, it is difficult to believe that professional, agricultural and business leaders and interests will not rally to the support of policies necessary to preservation of private ownership," the editorial concluded.

It's an interesting argument for the legislative modifications the roads believe necessary, and contains more than a grain of truth. A quarter century ago government ownership of the railroads would have been considered a beautiful but impossible dream; today we know it would be a nightmare.

Government Ownership of Railways

(*Boston News Bureau*)

Railway Age forecasts editorially that in the event of federal ownership of the railroads of the country, the annual loss to the government would be from $650,000,000 to $850,000,000. "It is far from certain that in a comparatively short time the American people will not find that government ownership of railways is the

OWNERSHIP OF RAILROADS

Comment by Newspapers Throughout the Country on a Recent Editorial in Railway Age Indicates Public Sentiment Strongly Favors Private Ownership

most important question confronting them," the editorial points out. "Government ownership would immediately add 1,000,000 railway employees to the present unprecedented number of government employees."

Regarding taxes, *Railway Age* points out that if the railways became the property of the government, it probably would not let the state or local governments tax them as it refuses to do on property it now owns. In 1932 Class I railways paid $263,500,000 in taxes to the state and local governments and in 1929 almost $305,000,000.

What of the Railroads?

(*Springfield, Mass., Union*)

Making allowances for the serious effect on railroad earnings by truck and bus competition and also by government subsidized waterways, it is unquestionable that government regulation and restriction for years has been largely responsible for the increasing financial difficulties of railroad companies. The pension bill of the last Congress is but a recent example of the manner in which for years the government has been increasing the operating costs of railroads with little effort to increase revenues or to establish fair competition.

It is now becoming plain that under present economic conditions, plus government regulation of the past type, the railroad companies cannot survive financially under private control. Railroad investment is in private hands or in savings, insurance, educational or other institutions. A loss of income to them would not only be loss in purchasing power but in taxes to the government on income while, perhaps, seriously affecting the soundness of institutions in which the savings of the people are deposited.

Is there a remedy? Obviously increases in freight or passenger rates would be a check on business and might bring in no more revenue because of a diversion of freight and passenger traffic to other mediums of transportation.

The surrender by private companies of the control of railroad operation to the government without change of ownership would naturally result as did the public control of the Boston Elevated which, on increased charges, is running a heavy deficit to be covered by the district taxpayers. Though Mr. Eastman advised that solution of the Boston Elevated in 1918, it is doubtful if in the light of the results, he would advise such a step for the solution of the country's railroad problem. That was a plan that could be made to look well on paper but that has gained an increasingly disagreeable appearance in practice.

If the tendency of government regulation of privately owned carriers or utilities is to develop into virtual government control, the tendency of that less satisfactory system is to push on to government ownership under which public utilities would become public burdens and perhaps public political nuisances.

The only satisfactory remedy appears to be the government's fair treatment of the railroads and proper regulation of their competitors.

Railway Progress

(*Adrian, Mich., Telegram*)

In the last year the principal American railway lines have displayed unusual initiative in their effort to meet the competition of the automobile and the motor transport lines. The speed of trains has been increased. Passenger cars have been air-conditioned. Stream-lined trains have been introduced and a dozen or more of them will be operating on regular schedules by the end of the year. Freight deliveries have been expedited and the passenger carrying business has been greatly increased as a result of attractive excursion rates.

Yet the fear of impending government ownership still besets the railroad executives and the current issue of the *Railway Age* refers to a statement of Joseph B. Eastman in which the federal co-ordinator of transportation said that "government ownership will be the ultimate solution of the railroad problem because private enterprise and capital will not be able to carry on successfully." * * *

The nationalization of the railroads is not pleasant to contemplate. Shippers and passengers recall the inefficiency that existed during the period of government control prior to 1920. The annual deficit of the Canadian National Railways is a matter of record. Railroad workers have only to look at the salaries and the hours of postoffice employees to determine whether they would rather carry on under private management. The taxpaying public should be alert to make certain that any move to put them in the railroad business shall be preceded by the most judicious and thoughtful consideration and that such action shall not be taken until every other solution is proved to be a failure.

Railroad Overhead Problem

(*Virginia, Minn., Enterprise*)

Recent increases in railway expenses, the adjustment of wages and a pension measure passed by congress over Mr. Eastman's protest, have added to the overhead which must be met from declining earnings. Drouth has decreased crop shipments and NRA has increased costs of coal and practically every other item which figures in railroad expense. All in all, the railroads of

the nation face a difficult situation, one which government ownership would not solve.

The Railroads

(*Kansas City, Mo., Drovers Telegram*)

What the future has in store for American railroads becomes more and more clouded as revenues decrease simultaneously with greatly increased costs. *Railway Age* wonders how long it will be before private capital steps out and government ownership steps in.

Railway Age estimates that $30,000,000 per month is added to the railway expenditures in three items: agreements to advance wages, increased cost of materials, and pension legislation. With declining revenues, such a combination renders it improbable that private capital will be able to carry on. And then what? * * *

Railway Age suggests that the only ways to avoid such a calamity are to increase rates, decrease wages and undo pension legislation.

(*Grand Island, Neb., Independent*)

The railroads of the country report a loss of five and a half per cent of carloadings for July as compared with the same month last year. They attribute it to three causes: An advance in the price of materials they must buy; agreements to advance wages; and the pension legislation. The government is apparently constantly increasing their expenses and at the same time spending millions of the taxpayers' money to establish more and newer forms of competition. The *Railway Age* of current issue calls attention to the logical result: The bankruptcy of the roads and the taking of the same over by the government. And with our "politics"?

Public Railway Ownership

(*Rome, N. Y., Sentinal*)

If the government were merely to extend its regulation of the roads to a point where it had complete control, without extinguishing any of the present bond and share holders, theoretically it could eliminate the evils of company speculation in the stocks of rivals, the jockeying for position; the maintenance of costly competing lines, terminals and rolling stock; the favoring of factories in the buying of supplies; the payment of exorbitant salaries—and a number of other objectionable features that have long been recognized. But between theory and practice in this finite world of ours, there is a great gulf. We all know that under complete government management it would be more than ever difficult to reduce the number of rail employees by cutting off unnecessary service. Every town would demand all its existing terminals, trains and what not.

Canada's Railway Example

(*Montreal Gazette*)

Here in Canada the transportation situation already presents most of the difficulties which the *Railway Age* apprehends and we have, or have had, a disastrous example of enforced competition in the railway field through the extravagant use of public money. The public are looking for a way out of the costly muddle created by these conditions and, or the majority of them, apparently believe there is a way out. But their elected representatives think otherwise or, at any rate, if they think at all in other than party political terms.

(*Biddeford, Me., Journal*)

The *Railway Age* says that government ownership of the railroads would add $21,000,000,000 to the national debt. But what are a few billions more or less among friends?

The Railroad Problem

(*Greensboro, N. C., Record*)

If the railroads are to make a go of it, on their own, it is evident that earnings must increase, or wage earnings and other operating costs must decrease—or both. Demand is made for modification of the short-haul section of the interstate commerce act, and that subsidies be abolished for competing carriers, also that the latter be regulated just as the railroads are now regulated.

The *Age* thinks the entire problem is expressed through government direction, and diversion of traffic, and the failure to increase freight rates on all items that would not be driven to other modes of transport.

It is easier to visualize the size and importance of the railroad problem when it is considered that private investors of America have approximately 26 billions of dollars tied up in them.

Government Ownership

(*Union Sun Journal, Lockport, N. Y.*)

During the past year the trend of railroad earnings has been upward. Lines which seemed in danger of being forced to repudiate bond interest began to earn small profits for the first time since depression set in. The outlook was encouraging.

Recent figures, however, show that the railroads as a whole are now undergoing an experience that is common to many other types of business these days. Revenue is still rising—but expenses are rising faster. The result is that many lines are once more approaching a financial crisis.

There are two possible solutions to this problem. One is for the railroads to further reduce their expenditures. That, at a time when all the national energies are being given to attempts to stimulate employment and raise wages, is not wanted by railroad managements, the government, or the general public. The other solution is to permit the railroads to regain some of the business they have lost, through legislation that will give them a chance to compete on an equal basis with their competitors—the trucks and water carriers.

When, through no fault of its own, an industry must face higher costs, it must be given every opportunity to earn more money with which to meet them. That is the way of progress—for the railroads and all other businesses as well.

Government Ownership of Railroads

(*Oneonta, N. Y., Star*)

The United States is drifting or more correctly speaking is being forced into a position where public officials and employees will be able to absolutely dominate the government and where the rest of the citizens of the country will be working for them rather than they being the servants of the people.

There cannot be question in the mind of any thinking person that the railroads can be operated more efficiently and satisfactorily to the public by private ownership. We had an experience during the war period of what government ownership would mean. If we seek other evidence we have but to look to Canada and compare the results of the government operated roads with those still in control of private companies. There is also the question of taxes that the roads now pay to various units of government, which amounts to over $300,000,000 annually.

Unquestionably there is a way to check the drift

toward government ownership. Massive cars hauling freight and all sorts of traffic have no legitimate rights to the use of public highways constructed in part at the expense of the railroads and the government has no right to subsidize their competitors. Excessive taxation also is adding to the burdens of the roads quite out of proportion to their earning powers or ability to pay at present. When the question is grasped by citizens generally they will rally to the support of policies necessary to the preservation of private ownership. However, there is growing evidence that only a small percentage of the people really think for themselves. Unless they can be persuaded to do some thinking on this problem, we probably will be face to face with government ownership. In which event unfortunate indeed will be those who are not listed on public pay rolls of some kind.

A Blow to Railroads

(Houston Post)

Regardless of how efficient management of the railroads may be, it does not seem possible that the roads in the drouth region can meet the conditions now facing them and remain solvent. A rarer combination of circumstances to force government ownership and operation of railroads could scarcely be imagined.

And if government ownership comes, the taxpayers may as well prepare to dig deep into their pockets to pay off the deficits. The country got a sample of the operation of railroads by government during the war. The sample consisted of rank inefficiency in operation, graft, insolence on the part of many rail employees, and a tremendous bill to pay.

Government Ownership

(Greenville, S. C., News)

"Are we drifting toward government ownership of railroads?" asks *Railway Age* in a thoughtful editorial; and the answer must be that unless there is a marked improvement in railroad affairs fairly shortly we shall be in danger of something of that sort. * * *

One doubts seriously if the majority of the citizens of this country desire to see the railroads become a government owned and operated enterprise. The service would hardly be as efficient, or as economical, and it is virtually certain that the government, in addition to the initial outlay in taking them over, would continue to have a heavy deficit in their operation. Politics being what it is in this country one can easily imagine that rate structures, wages and other such things would be decreed with far more regard for the effect upon votes than upon the financial condition of the enterprise.

There is no necessity, of course, for the roads to be taken over by the government if policies henceforth are pursued which will permit them to develop their services without excessive handicaps, and provided also that a reasonable improvement in their business occurs within the next year or so, enabling them to regain something approaching a normal volume of freight. There are various important developments in the way of increased railroad efficiency now in process which offer substantial hope for restoration of the railroads as profitable enterprises.

What we need particularly to guard against, perhaps, are certain political forces that are working, whether intentionally or not, to break down the railroads and probably other public service agencies. It is probably true that there is a fairly potent body of political sentiment that really desires to see government ownership of the railroads and other such enterprises brought about. While the objective may not be revealed, efforts to load these agencies down with all sorts of handicaps, including greatly increased taxes are steps in that direction, for it is obvious that government operation would become inevitable if these enterprises are so crippled that private capital will cease to be willing to undertake the risks of owning them.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended August 25 totaled 605,516 cars, an increase of 4,952 cars as compared with the week before, but a decrease of 31,994 cars as compared with the corresponding week of last year. As compared with 1932, however, this was an increase of 67,749 cars. Loading of merchandise, coal, coke, and live stock showed increases as compared with the week before, but grain and grain products and live stock were the only commodities to show increases as compared with last year. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, August 25, 1934

District	1934	1933	1932
Eastern	126,509	141,283	119,949
Allegheny	108,052	127,428	98,745
Pocahontas	41,075	49,012	36,820
Southern	81,038	83,746	79,022
Northwestern	96,846	96,304	70,414
Central Western	98,945	90,609	87,025
Southwestern	53,051	49,128	45,792
Total Western Districts	248,842	236,041	203,231
Total All Roads	605,516	637,510	537,767
Commodities			
Grain and Grain Products	36,683	28,727	37,971
Live Stock	32,321	18,804	19,188
Coal	100,982	130,336	94,688
Coke	4,234	6,468	2,880
Forest Products	21,505	27,182	16,608
Ore	27,745	38,718	7,210
Merchandise L.C.L.	160,685	168,822	171,076
Miscellaneous	221,361	218,453	188,146
August 25	605,516	637,510	537,767
August 18	600,564	643,406	518,440
August 11	602,530	629,743	511,965
August 4	611,298	620,482	496,626
July 28	608,848	644,839	511,103
Cumulative Total, 34 Weeks	20,166,536	18,373,831	18,105,322

Canadian Loadings Top '31 Week

Car loadings in Canada during 1934, according to the compilation of the Dominion Bureau of Statistics, have been well above 1933 loadings each week and, for the majority of the time, above 1932 loadings, but the total of 48,220 cars for the week ended August 25 was the first to exceed the 1931 total which, for that week, was 47,495 cars. This was the heaviest loading so far in 1934.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
August 25, 1934	48,220	17,566
August 18, 1934	43,828	17,527
August 11, 1934	40,313	18,735
August 26, 1933	41,887	19,501
Cumulative Totals for Canada:		
August 25, 1934	1,442,808	752,800
August 26, 1933	1,218,599	616,038
August 27, 1932	1,381,824	653,320

Personal Interviews Aid in Promoting Safety

LAST year, the Providence division of the New York, New Haven & Hartford won the system yard safety prize, the freighthouse prize and the train, yard and engine service prize, on a railroad that had an excellent safety record.

This success is attributed to the practice on this division of either the superintendent or the assistant superintendent giving a safety interview to each operating department employee on the division. The basic purpose of these interviews is to cause each man to think for himself. In addition to the interview itself, specific instances of unsafe practices that have been or might be applicable to his own job or his own territory are cited to the man, and he is encouraged to give his ideas as to the promotion of safety. After each such conference, the employee signs a copy of the interview and it is incorporated in his service record.

The idea of handling safety work in this manner originated with the superintendent, and, despite the fact that the Providence division is an extremely busy one, including the city of Providence, the largest city served exclusively by one railroad in the country, he or his assistant have found time to give such personal interviews to all their men. The interview itself is the joint product of the supervisory officers and the local brotherhood officers. The division engineer and the master mechanic also have similar interviews with men of their departments.

The operating department interview is as follows:

"Safety is of the first importance in the discharge of duty."

It is understood that the work of railroad employees requires constant alertness while on duty, or on the property. To keep one's self alert requires proper rest, care of one's physical being and a healthy mental attitude.

In the interests of safety and welfare of patrons and employees, operating rules and regulations have been worked out, based on many years' experience, supplemented by special rules—particularly those known as safety rules—and instructions issued from time to time. The management has instituted various examinations to insure knowledge and fitness for the position held, but practically, such examinations cannot be repeated constantly at short intervals. It is, therefore, very necessary and important that each employee review these rules and the requirements of his work with such reasonable frequency as to keep himself thoroughly familiar and qualified to perform in a safe, efficient and economical manner.

These three requirements are imposed on the railroads by the Federal Transportation Act of 1920, but even above this, these same requirements are imposed upon each employee, including the officers, as a moral obligation to himself, to his fellow-workers and to the public.

All rules are important. The potential results from the violation of some rules are greater than others. The violation or the ignoring of any rule breeds carelessness, and eventually trouble.

Some of the more fundamentally important subjects covered by the rules are:

Constant alertness—knowing, rather than working on assumption. Doing the thing right every time as a matter of habit, so that one's own slips can be caught. When in doubt, take the safe course.

Assisting in every way for safe and proper operation and observing compliance with rules by other employees.

Proper handling of train orders by operators, train and engine crews, and thorough understanding of same by all concerned.

Proper observance of all signals, and the necessity of employees involved communicating to each other by name the indication of all signals affecting the movement of the train.

Proper authorization to pass inoperative signals.

Checking and reading bulletin and circular notices.

Proper flag protection; compliance with speed restrictions, both on road and in yard; cutting out trains at stations; stopping and protecting public crossings where required; also preventing the unnecessary blocking of all public crossings; keeping hand signals in good order and ready for immediate use; observing rules for pushing movements.

In switching and other movements; to have a thorough understanding with each member of the crew as to the part of the work each is to perform; careful and correct handling of switches; stopping before fouling a lead or adjacent track, while waiting for switches to be lined.

When cars are left, there must be sufficient clearance between tracks and enough hand brakes applied on the head and rear ends to hold the cars.

Watching trains to note conditions and exchange of signals between all concerned; also noting any improper condition anywhere on the property and taking such action as will insure safety.

Proper uniforms and personal appearance.

Proper announcements in passenger cars and notifying headquarters about passengers for connections if the train is off schedule.

Warmth and ventilation of passenger cars; keeping aisles clear and packages in racks, so placed that they will not fall; closing passenger car doors at stations when passengers are off and on.

Check the levers after the route is lined, and so far as practicable see that the position of switches and signals corresponds to the position of the levers.

Use of lever locks or rings on levers operating signals not to be cleared, to avoid overlooking.

Where bell code is used, to announce slowly and clearly, and repeat until acknowledged; acknowledge bell signal promptly.

Blocking and recording.

Proper protecton and handling of motor hand cars.

These are mentioned merely as examples, and in citing them, it is not intended to detract from the importance of thorough and whole-hearted compliance with all rules and regulations.

Courtesy and tact, both between employees and with the public, are essential. Discourtesy is harmful to all concerned, and is an attitude not acceptable to any decent minded employee, and cannot be tolerated by the management.

Everyone is, in some manner, morally responsible for the safety and conduct of his fellow men. This becomes increasingly true of railroad employees—the nature of whose work is so interdependent one on another that it is incumbent upon all to do everything possible to safeguard and improve:

First, our own work.

Second, to assist in every practicable way to safeguard and improve the work of those working with us.

With authority comes responsibility. Accordingly, everyone with authority over others has an increased moral, and an actual, responsibility to study those under him; to know each one's carelessness, inaccuracies or failures; to know that each one is in proper condition to perform his work and to instruct and educate, so far as it lies within his power.

Everyone, before starting to work, should first charge himself with the responsibility of renewed alertness and attention to these facts; to the need for extreme care and thoroughness in his work and then, at the start of each tour of duty, to discuss this with his immediate subordinates or fellow employees to avoid accidents and consequent injury or damage, with the resultant distress which invariably follows.

Such effort is for the common good of all.

Pooling of Grain Elevators Suggested

(*Continued from page 283*)

tages of unified terminal operations and effect savings in switching costs in advance of any unification of terminals.

In addition such a plan would, in my opinion, tend to free the terminal markets from the domination by terminal elevator operators which the Federal Trade Commission criticised in its report on The Grain Trade, Volume III. It should be understood that the Federal Trade Commission did not recommend the pool operation of all railroad-owned elevators which I have suggested.

In addition I recommend that the construction of terminal elevators should be strictly regulated by certificate of convenience and necessity upon a proper showing to the Interstate Commerce Commission. As President Budd of the Burlington has well stated in his letter, a grain merchandiser might locate a terminal elevator at a point which would complicate railroad operation instead of facilitating it if he were free to do so.

Test Run Made with L. & N. E. 2-8-2 Locomotive

British express locomotive develops 2,100 hp. and operates at unusually high speeds

By E. C. Poultney

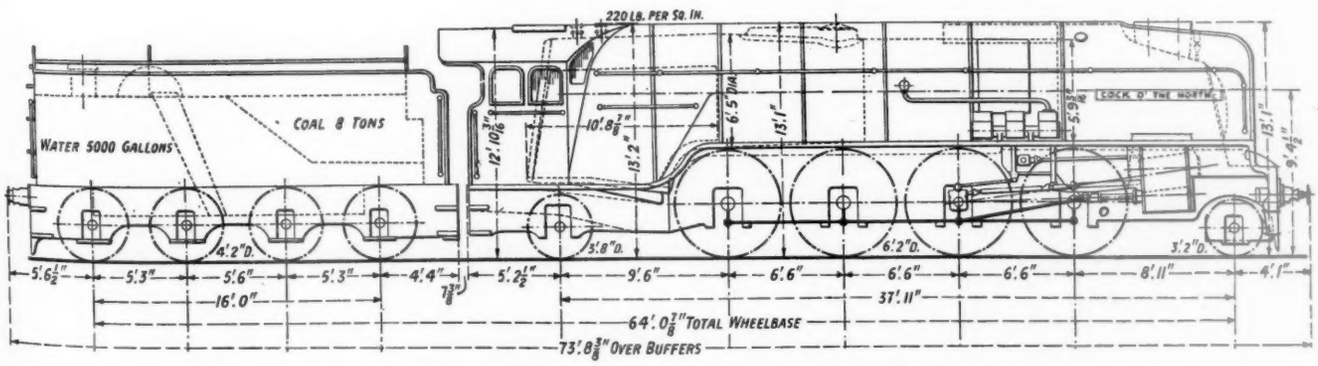
IN order to test the capacity of the new 2-8-2 three cylinder express locomotive recently built for service on the London & North Eastern Railway, a special trial run was made over the main line between London (King's Cross) and Barkston Junction, just beyond Grantham, and return, a total distance of 219.4 miles and, as the locomotive showed in many respects a remarkable performance, it is believed the following notes from the records of this trip may be of interest by way of supplementing the description of this locomotive which appeared in the *Railway Age* of July 14.

For the purpose of making the trial a special train was made up consisting of 18 standard eight-wheel vestibuled coaches, as used in mainline express services, and, in addition, the company's eight-wheel dynamometer car, the total number of axles being therefore 76 and the total number of vehicles 19. This train, believed to be the heaviest ever operated over a British line—that is, for one composed of passenger stock—had a total tare weight of 727 short tons, making with the locomotive a total moving weight of 912 short tons. The trial was made on June 19, the train leaving just in advance of "The Flying Scotsman," the 10 a.m. train from King's Cross to Edinburgh (Waverly) and as an exhibition of power output was in every way considered most successful. A few particulars of the pulls recorded by the dynamometer car and the cut-offs used, together with the speeds attained and the character of the grades encountered, will give a good idea of the performance of this locomotive.

Particulars of the Experimental Run

The start was easily made with an initial pull of 31,300 lb. and soon after the cut-off was reduced to 45 per cent, the speed being then 20 m.p.h. The rising grades immediately after leaving the station were at the rate of 0.95 and 0.91 per cent. On the 7.7 up-hill miles (0.5 per cent grade) from Wood Green to the summit at Potter's Bar, the cut-off was 20 per cent to commence with and, from a point half way up the grade to the top, 22 per cent, the speed averaging 53.3 m.p.h., 8 min. 38 sec. for the 7.7 miles, while at the summit the speed was 50 m.p.h. Previously, on the slightly falling grade at Hornsey, 3.5 miles from the start, the pull had been 11,200 lb. at 58.5 m.p.h., giving 1,730 drawbar horsepower, and on the 7.7 up-hill miles the minimum steam pressure was 195 lb. per sq. in. From Potter's Bar to Knebworth, 25 miles from London and 12.3 miles from Potter's Bar, took 12 min. 17 sec., and from Knebworth to Abbott's Ripton, the 38.5 miles were run easily in 35 min. 47 sec. at 10 per cent cut-off, except between the fifty-ninth and sixty-second mile posts on a rising grade of 0.5 per cent, where it was lengthened to 15 per cent. Over the distance of 34 miles, mile post 25 to mile post 59, to the foot of the 0.5 per cent grade the drawbar pull averaged 5,600 lb. and the horsepower about 1,050. The minimum speed on the grade was 53 m.p.h. The train stopped at Peterborough, 76.4 miles from the start, in 81 min. 46 sec. including a slow-down at Yaxley, 72.6 miles, giving a running speed of 56 m.p.h., which obviously could have been much improved upon had it been desired to do so. It may be remarked in this connection that one of the principal points of interest is the long distance at which it was possible to haul this heavy train with no greater cut-off than 10 per cent.

From Peterborough to Stoke Summit, 100 miles from London, was the most interesting part of the outward journey for the reason that the rising grades encountered between the eighty-fifth and one-hundredth mile post gave opportunity for the engine to exhibit its hauling capacity, particulars of which are shown in the tabulated statement dealing with the work done between Essendine and Stoke Summit. The start from Peterborough was made with an initial pull of 36,900 lb., which fell to 26,800 lb. at 10 m.p.h. As speed increased the engine was gradually notched up to 20 per cent cut-off, reached at 33 m.p.h. On the 0.38 per



Outline of L. & N. E. R. Three-Cylinder Express Locomotive "Cock of the North"

cent grade up to Essendine the speed was held at 60 m.p.h., the pull being 9,160 lb. at 15 per cent cut-off, and the drawbar horsepower 1,470. Up the 0.5 per cent grade between mile posts 91 and 95 the cut-off was for the first part 20 per cent, giving 1,700 drawbar horsepower, then upon increasing to 25 per cent at mile post 94 the drawbar horsepower was 1,870, while at the top of this grade the cut-off was further increased to 30 per cent near mile post 95.5, which on the succeeding short level stretch, gave a speed of 57.5 m.p.h., and 2,090 drawbar horsepower. The cut-off remained at 30 per cent on the subsequent climb at 0.56 per cent, the horsepower developed being as given in the table. Steam pressure ranged between 210 and 215 lb. per sq. in. throughout.

Performance on Up Grade

The line rises for practically the entire distance of 15.3 miles from Tallington to Stoke, and between these points the engine maintained the excellent average of 60.3 m.p.h. for the 15.3 miles. Over the more difficult part of the distance—the 11.5 miles from Essendine to the summit—the speed averaged 59.3 m.p.h. and the drawbar horsepower 1,786, equal to one horsepower developed at the back of the tender for each 1.87 sq. ft. of combined heating surface. From about mile post 93.5 to the summit—a distance of 6.5 miles—the minimum pull registered was 11,880 lb. and the minimum power 1,800 drawbar horsepower, while the mean figures work out to 12,280 lb. pull, 1,908 drawbar horsepower, and the speed 58.2 m.p.h.

Performance Between Essendine and Stoke Summit

Location, mile post	Grade up, per cent	Speed, m.p.h.	Drawbar pull, lb.	Drawbar hp.
Essendine				
88.6	0.38	60	9,160	1,470
90	0.18 down			
	Level	63	10,080	1,690
	0.047			
91	Level			
	0.5	62	9,520	1,570
92	0.5	60.5	10,300	1,660
93	0.5	58	12,940	1,700
94	0.5	58	12,100	1,870
95	0.5	56	12,100	1,805
96	0.5			
	Level	57.5	13,640	2,090
97	0.31			
	Level	60	12,100	1,935
98	0.56	60	12,100	1,935
99	0.56	57	11,880	1,800
100.1				
Stoke Summit	0.56	56.5	11,880	1,800

Note: Grades unless otherwise stated are all "up." Location is given in miles from London (King's Cross) terminal.

The engine and train were turned on the wye at Barkston Junction and, on starting for the return journey to King's Cross, the pull required on a grade of 0.5 per cent was shown to be 32,600 lb. After the train had travelled 0.5 miles the cut-off was shortened to 40 per cent and at the end of the complete mile the speed was 26 m.p.h., the pull being 18,680 lb., equivalent to 1,295 drawbar horsepower. Cut-off was further reduced to 15 per cent about two miles from the start and kept there till about 0.75 miles past Grantham when it was increased to 20 per cent for the five-mile ascent at 0.5 per cent. On the grade the horsepower varied from 1,415 to 1,490, while the speed at the foot was 49 m.p.h. and 45 m.p.h. at the top, the boiler maintaining a pressure of 210 lb. per sq. in.

Free Running When Coasting

After passing Stoke Summit steam was shut-off down the succeeding falling grades of 0.56 and 0.5 per cent, the engine drifting down grade freely at speeds varying little from 60 m.p.h., which was the speed at the top. When running with steam shut off the engine was operated with the poppet-valve gear in the mid-gear position and, when so placed, the exhaust valves are held off their seats, thus providing a very efficient by-pass in consequence of which the engine ran with extraordinary freedom. Owing to the nature of the line between Stoke Summit and Peterborough little effort was required to run this distance.

After a stop at Peterborough the train was re-started with a pull of 36,600 lb. At approximately two miles from the start the engine was notched up to 12 per cent cut-off, this being increased to 15 per cent two miles further on and then again increased this time to 20 per cent for the ascent to Abbott's Ripton. Up these 4.5 miles at 0.5 per cent the speed was held at 45.5 m.p.h., the cut-off being as stated only 20 per cent, comparing with a cut-off of 25 per cent used on the 0.5 per cent grade between the ninety-first and ninety-sixth mile posts on the outward journey, which produced, as will be seen from the tabulated statement, a mean speed of about 58 m.p.h.

Over 2,000 Drawbar Horsepower

From the summit near Abbott's Ripton to Biggleswade the running calls for little comment and during this part of the journey the engine was running with a cut-off of only 12 per cent for 20 miles, but after passing the latter station was opened out to 18 per cent. Nearing Hitchen on the rising grade of 0.5 per cent the cut-off was increased to 25 per cent, giving a pull of 11,000 lb. and a speed of 61.5 m.p.h., the power developed being 1,800 drawbar horsepower and, on the cut-off being lengthened to 30 per cent, the horsepower increased to 2,100 and the pull augmented to 13,240 lb., the train traveling at 60 m.p.h. on the rising grade of 0.5 per cent just past Hitchen. This was the highest power produced and, considering the size of the engine, constitutes a fine performance, being equal to 0.63 drawbar horsepower per square foot of combined evaporation and superheating heating surface, or, put in another way, one drawbar horsepower was produced for each 1.59 sq. ft. of combined heating surface. After this grade was surmounted little further effort was required, and the final part of the journey was run without incident, except for the care necessary in entering the terminal with this long and heavy train.

Maximum Mean Speeds

During the trip no effort was made to obtain any fast running, it being desired rather to test the performance on up-hill grades at high speeds and, for this reason, therefore, the work done between Essendine and Stoke is probably of the greatest interest, though the fine effort on the return journey between Biggleswade and Stevenage, over 12.5 miles of rising grades, run in the remarkable time of 12.25 min., was another instance of the high power output obtainable. Maximum mean speeds for distances between stations were 70 m.p.h. from Brookan's Park to Hatfield between mile posts 14 and 18 on the outward journey down hill at 0.34 to 0.5 per cent, and 76 m.p.h. between Potter's Bar and New Barnet on the return trip between the tenth and thirteenth mile posts where the grade is down at 0.5 per cent.

More recently in regular express traffic the engine has run at much higher speeds and 86 m.p.h. has been attained on the falling gradient between Potter's Bar and London.

President Giving Attention To Railroad Situation

WASHINGTON, D. C.

INFLUENCED to some extent by the fact that the railroads have found it necessary to petition the Interstate Commerce Commission for an increase in freight rates, as well as by the fact that the latest reports of traffic and earnings have reversed the favorable trend shown in earlier months, President Roosevelt and his advisers have been turning their attention more directly toward the transportation situation of late and it is understood there is some prospect of some statement from the President before long outlining his position in the matter. The President has not made any public statement of policy on the railroad or the transportation system in general since his Salt Lake City speech in September, 1932, when he was still a candidate, but on the other hand he has said nothing to take back anything of what he said at that time, although some comment has been aroused by his failure to express himself on the recommendations made by Co-ordinator Eastman. After his recent return from his western trip the President was asked by newspaper men about numerous rumors that had been whispered around as to some prospective move by the government in connection with the railroad situation. He replied then that he knew of nothing under contemplation and dismissed with a laugh queries as to any prospect of government ownership.

More recently the President has given some consideration to the railroad situation generally and he is understood to have gone over the whole subject at a conference at Hyde Park on September 4 with J. J. Pelley, president of the New York, New Haven & Hartford. Mr. Pelley was a member of the conference committee of executives who held numerous conferences with President Roosevelt while the legislation under which Commissioner Eastman was appointed federal co-ordinator was under consideration. The program which the railroads would like to have the President endorse is well known, was largely covered by the views expressed by the President is his Salt Lake Citty speech, and has been partially covered by Co-ordinator Eastman's recommendations which received no attention at the last session of Congress but which it is expected will be pushed at the coming session. The President would undoubtedly include the subject in his message to Congress at the opening of the session and it is said to be possible that he might express himself at an earlier date.

Meanwhile Co-ordinator Eastman is actively pursuing his investigations and has still to report on several phases of the situation which might involve proposed legislation not covered in his earlier reports. One of these phases is the extent to which forms of transportation competing with the railroads are being aided in their competition by government subsidies. About the time Mr. Eastman was appointed co-ordinator the President also appointed a special advisory committee on transportation, headed by Secretary Roper of the Department of Commerce, which it was understood was to review Mr. Eastman's recommendations. There have been no indications that this committee has conducted any extensive investigations of its own. The railroad division of the Reconstruction Finance Corporation has also been making a comprehensive study of the situation of various railroads, particularly those now in the hands of trustees or receivers, which have received considerable loans from the R. F. C., and which are headed for reorganization. Elaborate studies are being made of each of the railroads in trusteeship, to develop the causes and to indicate possible savings in operations. The railroad division is also co-operating with the co-ordinator in his studies.

It is assumed that one of the subjects discussed with the President by Mr. Pelley was the proposed reorganization of the railroad associations, including a merger of the Association of Railway Executives and the American Railway Association into one organization, which would be a step in line with Mr. Eastman's recommendations that the railroads "form a more perfect union." A tentative plan to this end was approved by the advisory committee of the Association of Railway Executives at a recent meeting and is to be considered at an early meeting of the member roads of the two associations. Such a meeting had been tentatively scheduled to be held in Chicago on September 6, but has been postponed and the date is still indefinite.

Odds and Ends . . .

Dramatist-Brakeman

Few people knew that Augustus Thomas, dean of American playwrights, who died recently at an advanced age, spent many years of his youth as a boomer brakeman.

Milwaukee Stenographer Honored

The coveted Gregg expert gold medal has been won by Ashley Wilhite, stenographer in the general offices of the Chicago, Milwaukee, St. Paul & Pacific. To win it Wilhite took dictation for five minutes at the rate of 175 words per minute and then transcribed it on the typewriter with an accuracy of better than 95 per cent.

The Beginning of the End

In a certain section of Pennsylvania which is populated chiefly by the so-called Pennsylvania Dutch who still speak imperfect English, a little boy stood with his mother beside the railroad track watching a long freight train pass. When the caboose went by the little fellow said to his mother: "When the little red house makes by, the train's all, ain't Mom!"

Incidental Expenses

Thousands of rats were routed from the Hoosac Tunnel grain elevator of the Boston & Maine at Charlestown, Mass., by two cats, "Bobby Burns," and "Julia," sometimes called "Highland Mary." Traps and poisons of all kinds were tried in a vain attempt to rid the elevator of rats, some of which were as large as the average cat. Finally the two cats were brought in and in a short time they had driven all the rats away, but not before several hundred were killed. They are now "on the payroll" at the rate of a can of horse meat and spinach a day, which figures out $36.50 per year.

World's Fattest Railroader

When the editor of this department worked on the Southern, there used to be an engineman in Tennessee who was so fat that he had to stop on a curve to widen the distance between the engine and tender so he could get off, all of which brings us to the Norfolk & Western. That line having produced a 6-ft. 8½-in. giant, only to have him beaten by the C. & O. and the S. P., now claims the fattest railroader title for John Winstead, colored laborer at Lambert Point, Va. John is 5 ft. 7 in. tall and his girth is the same. His normal weight is claimed to be 390 to 400 lb. but hot weather has cut this down to a mere 370. Even so, the claim is made that he is the world's fattest railroader.

NEWS

Railway Gross and Net Earnings Down in July

Rate of return for month was 1.52 per cent as compared with 2.77 per cent last year

Class I railroads for the first seven months of 1934 had a net railway operating income of $261,024,805, which was at the annual rate of return of 1.99 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. In the first seven months of 1933, their net railway operating income was $219,481,527, or at a rate of 1.66 per cent.

Operating revenues for the first seven months of 1934 totaled $1,905,880,618 compared with $1,709,046,574 for the same period in 1933, an increase of 11.5 per cent. Operating expenses for seven months amounted to $1,420,770,832 compared with $1,263,976,739 for the same period in 1933, an increase of 12.4 per cent. Class I railroads in the seven months paid $149,100,376 in taxes compared with $154,835,597 for the same period in 1933, a decrease of 3.7 per cent. For July alone, the tax bill amounted to $21,285,508, a decrease of $1,772,049 or 7.7 per cent.

Thirty-three Class I railroads failed to earn expenses and taxes in the first seven months of 1934, of which 9 were in the Eastern district, 7 in the Southern, and 17 in the Western.

Class I railroads for July had a net of $35,220,889, which, for that month, was at the rate of 1.52 per cent. In July, 1933, their net was $64,752,602, or 2.77 per cent. Operating revenues for July amounted to $275,983,518 compared with $293,723,872 in July, 1933, a decrease of six per cent. Operating expenses in July totaled $208,483,770 compared with $194,925,735 in the same month in 1933, an increase of 7 per cent.

Class I railroads in the Eastern district for seven months in 1934 had a net of $165,477,754 at the rate of 2.52 per cent. For the same period in 1933, their net was $143,285,228 or 2.16 per cent. Operating revenues—railroads in the Eastern district for seven months totaled $992,131,991 an increase of 13.4 per cent above the corresponding period in 1933, while operating expenses totaled $714,008,175, an increase of 14.9 per cent. Railroads in the Eastern district for July had a net of $17,750,287, compared with $36,177,665 in July, 1933.

Class I railroads in the Southern district for seven months had a net of $33,612,146, at the rate of 1.86 per cent. For the same period in 1933, their net amounted to $33,214,538, at the rate of 1.80 per cent. Operating revenues of the Class I railroads in the Southern district for seven months amounted to $242,630,642, an increase of 7.7 per cent above the same period in 1933, while operating expenses totaled $183,983,957, an increase of 10.2 per cent. Class I railroads in the Southern district for July had a net of $1,827,667, compared with $7,166,259 in July, 1933.

Class I railroads in the Western district for seven months had a net of $61,934,905, at the rate of 1.30 per cent. For the same seven months in 1933, they had a net of $42,981,761, at the rate of .90 per cent. Operating revenues in the Western district for seven months amounted to $671,117,985, an increase of 10.2 per cent above the same period in 1933, while operating expenses totaled $522,778,700, an increase of 9.9 per cent. For July, the railroads in the Western district reported a net of $15,642,935. The same roads in July, 1933, had a net of $21,408,678.

CLASS I RAILROADS—UNITED STATES

	Month of July 1934	1933	Per cent increase
Total operating revenues	$275,983,518	$293,723,872	D 6.0
Total operating expenses	208,483,770	194,925,735	7.0
Taxes	21,285,508	23,057,557	D 7.7
Net railway operating income	35,220,889	64,752,602	D 45.6
Operating ratio—per cent	75.54	66.36	
Rate of return on property investment	1.52	2.77	
Seven months ended July 31			
Total operating revenues	$1,905,880,618	$1,709,046,574	11.5
Total operating expenses	1,420,770,832	1,263,976,739	12.4
Taxes	149,100,376	154,835,597	D 3.7
Net railway operating income	261,024,805	219,481,527	18.9
Operating ratio—per cent	74.55	73.96	
Rate of return on property investment	1.99	1.66	

D—Decrease.

Tom Thumb Races Gray Mare

A reproduction of the historic race on August 25, 1830, between the "Tom Thumb," Peter Cooper's original locomotive, and an old gray mare, was enacted by the Baltimore & Ohio over the Illinois Central tracks between Thirty-fifth and Thirty-ninth streets, Chicago, on August 24, 1934. Actors in the "Wings of a Century," a pageant of transportation at A Century of Progress, attended the race in costume to lend local color.

Ontario's Premier Ousts Province's Railway Head

Railway chairman of prior regime is relieved as investigator probes railway affairs

Exemplifying the vicissitudes of the career of railway management when managers are beholden to political leaders, Premier Mitchell F. Hepburn, of Ontario, announced in Toronto last week the dismissal of Chairman George W. Lee of the Temiskaming & Northern Ontario railway commission, which operates the province's railway.

Pending completion of an investigation into the operations of the Temiskaming line which is being conducted by Armand Racine, an attorney of Windsor, Ont., the Premier would not say definitely whether the Cochrane-Moosonee extension of the railway to James Bay tidewater would be continued. "We have," said the Premier, "to fix the responsibility on someone who authorized the extension" to Moosonee. "It has cost the province $13,000,000 and there is no need for its operation."

That section of the Temiskaming & Northern Ontario from Abitibi to James Bay should be closed down in the opinion of Lieut.-Col. L. T. Martin, of Ottawa, vice-chairman of the railway commission. He testified last week before the investigation into the administration of the provincial railway road being conducted at North Bay, the headquarters of the railway.

Col. Martin, however, expressed the view that the 70 miles of railway from Cochrane to Abitibi should be continued in operation as economically as possible. The Conservative government under Premier G. Howard Ferguson, now Canadian High Commissioner at London, was responsible for construction of the branch from Abitibi to James Bay, while the former government of Premier E. C. Drury built the line from Cochrane to Abitibi.

Witness who had been on the commission since 1921, testified he was unaware of the Abitibi-James Bay branch's true financial status but he knew it had recorded "substantial losses." He had not been surprised when the exact deficits had been revealed, Lieut-Col. Martin continued, adding he had not been able to make recommendations as he served in an advisory capacity.

Col. J. I. McLaren, another member of the railway commission, said he thought the Abitibi-James Bay branch should be continued in operation at the lowest cost to "give opportunity of development until times are good" as the original idea of the line was to develop these parts of the north. Another two or three years' trial, how-

ever, would mean another $500,000 deficit, Mr. Racine remarked.

When Col. McLaren mentioned possibility of developing lignite and china clay products in the area, Mr. Racine stated there was still no direct evidence of minerals around Hudson and James Bay.

Col. Martin testified that he knew nothing of the $3,500 bonus to George W. Lee, chairman of the commission.

Col. McLaren said he considered the railway to be operated as cheaply as possible with a view to safety. He would not recommend any changes without a closer survey, and said he considered it would be difficult to cut the office staff 25 per cent without impairing the efficiency of the line.

Net Deficit For Six Months $24,853,445

Class I railways in the first six months of 1934 had a net deficit after rentals and other fixed charges of $24,853,445, according to the Interstate Commerce Commission's monthly compilation of selected income and balance-sheet items. This compares with a deficit of $101,204,009 for the corresponding half of last year. For the month of June there was a net income of $5,869,426 as compared with a net income of $21,418,915 for June, 1933. Dividend declarations, from income and surplus, for the first half of this year totalled $51,612,518, as compared with $38,585,293 for the first half of 1933. The commission's summary follows:

Illinois Central Modernized Coaches Now in Service

The first of the 37 coaches which the Illinois Central is modernizing in its own shops, as reported in the *Railway Age* of September 1, have been placed in service on "The Daylight," which runs between Chicago and St. Louis. It is anticipated that all the coaches will be placed in service before October 1. In modernizing the coaches, special attention has been given to interior decorating, while in addition revolving chairs and women's and a men's lounge have been installed in each car.

Equipment on Order

Class I railroads on August 1 had 13,755 new freight cars on order, according to reports received by the Car Service Division of the American Railway Association. On the same day last year, 1,187 new freight cars were on order and on the same date two years ago, there were 1,572. The railroads on August 1 this year also had 35 new steam locomotives on order and 107 electric locomotives. New steam locomotives on order August 1, 1933, totaled one and on the same date in 1932, there were six.

In the first seven months of 1934, the railroads installed 9,483 new freight cars. In the same period last year, 1,391 new cars were placed in service and for the same period two years ago, the total number installed was 1,646. Six new steam locomotives and eight new electric locomotives were installed in service in the first seven months this year. The railroads in the first seven months of 1933 installed one new steam locomotive, and 34 in the corresponding period in 1932. Freight cars or locomotives leased or otherwise acquired are not included in the above figures.

P. W. A. Sells Railroad Securities

The Public Works Administration, in announcing the creation of a revolving fund from which new allotments may be made from the proceeds of sales of securities through the Reconstruction Finance Corporation, states that two railroad issues which P. W. A. took at $2,404,000 in connection with loans for the purchase of railroad equipment were sold at $2,365,012, the highest bids, which were premium bids discounted for non-payment of the balance of the first year's interest. The issues were equipment trust certificates of the Lehigh & New England and the Chesapeake & Ohio. Chairman Jesse Jones of the R. F. C. has announced that that agency will soon sell other issues held by P. W. A.

Employment Resulting from P.W.A. Loans

The Public Works Administration has announced that the number of railroad employes working in shops and rights of way on the construction and rehabilitation program financed by P.W.A. dropped from 61,500 on July 14 to 57,000 on August 25. The Bureau of Labor Statistics of the Department of Labor reported 13,625 at work on July 14 on new cars and locomotives being built in outside shops as a result of P.W.A. loans to railroad companies, and it is estimated that this number had increased to 16,000 by August 25, although reports of the actual number of men at work in their shops have not been received from the manufacturers.

I. C. Crafts Vote on Unions

In a referendum conducted by the National Mediation Board, shop employees of the Illinois Central on August 30, chose to be represented by the standard unions instead of company unions. Machinists, boiler makers, blacksmiths, sheet metal workers, electrical workers, carmen, firemen, oilers and coach cleaners were involved. This referendum under which employees choose between company and outside unions is the first large one conducted by the mediation board since its appointment. Requests for similar referenda among employees of other large carriers are being prepared by the American Federation of Labor. In the I. C. election, 9,000 employees were eligible to vote and approximately 90 per cent availed themselves of the privilege.

I. C. C. to Reconsider Directorate Authorizations to H. W. deForest

The Interstate Commerce Commission has re-opened for further consideration the proceedings in which it has authorized Henry W. deForest to hold the positions of director of the Southern Pacific, the Illinois Central, and the Delaware & Hudson and has assigned the case for hearing at Washington on September 10 before Assistant

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 143 reports (Form IBS) representing 149 steam railways

TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of June 1934	For the month of June 1933	*Income Items*	For the six months of 1934	For the six months of 1933
$41,836,299	$59,831,340	1. Net railway operating income	$225,803,910	$154,728,918
20,786,977	19,199,444	2. Other income	87,539,320	86,702,495
62,623,977	79,030,784	3. Total income	313,343,230	241,431,413
11,278,673	11,239,657	4. Rent for leased roads	66,628,664	65,566,481
43,646,526	44,554,484	5. Interest deductions	260,550,692	265,777,444
1,828,651	1,817,728	6. Other deductions	11,017,319	11,291,497
56,753,850	57,611,869	7. Total deductions	338,196,675	342,635,422
5,869,426	21,418,915	8. Net income	*d 24,853,445*	*d 101,204,009*
		9. Dividend declarations (from income and surplus):		
11,482,767	5,882,685	9-01. On common stock	43,215,869	31,831,314
3,558,806	2,013,488	9-02. On preferred stock	8,396,749	6,753,979

BALANCE-SHEET ITEMS

Selected Asset Items

	Balance at end of June 1934	Balance at end of June 1933
10. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$759,791,777	$745,782,670
11. Cash	305,385,624	294,422,727
12. Demand loans and deposits	37,919,959	31,864,221
13. Time drafts and deposits	41,001,913	23,804,920
14. Special deposits	68,197,420	47,932,471
15. Loans and bills receivable	6,399,697	10,295,746
16. Traffic and car-service balances receivable	54,042,314	48,296,711
17. Net balance receivable from agents and conductors	43,233,382	44,116,934
18. Miscellaneous accounts receivable	145,908,811	138,585,154
19. Materials and supplies	308,382,509	294,516,547
20. Interest and dividends receivable	42,134,101	40,954,888
21. Rents receivable	2,607,796	2,066,290
22. Other current assets	4,357,316	5,882,529
23. Total current assets (Items 11 to 22)	1,059,570,842	982,739,138
Selected Liability Items		
24. Funded debt maturing within six months*	43,880,608	81,472,290
25. Loans and bills payable†	319,083,337	346,040,954
26. Traffic and car-service balances payable	69,960,622	68,198,097
27. Audited accounts and wages payable	224,138,629	202,081,423
28. Miscellaneous accounts payable	55,337,397	62,924,603
29. Interest matured unpaid	299,049,790	219,867,817
30. Dividends matured unpaid	13,754,094	13,397,816
31. Funded debt matured unpaid	275,628,721	97,942,375
32. Unmatured dividends declared	10,597,512	5,868,309
33. Unmatured interest accrued	92,286,934	96,971,673
34. Unmatured rents accrued	22,540,376	20,368,697
35. Other current liabilities	22,230,755	22,040,498
36. Total current liabilities (Items 25 to 35)	1,404,608,167	1,155,702,262

* Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.
† Includes obligations which mature less than two years after date of issue.
d Deficit.

Director Burnside of the commission's bureau of finance. The notice calls attention to the fact that the three companies are major companies in different systems under the commission's plan of consolidation and to a request by Walter E. Meyer, a stockholder of the St. Louis Southwestern, who had opposed the acquisition of control of that company by the Southern Pacific.

Additional Exhibitors at Track Supply Association

Since the publication in the *Railway Age* of August 25, page 245, of the tentative list of companies who will participate in the exhibit of the Track Supply Association, coincident with the Roadmasters convention, at the Hotel Stevens, Chicago, on September 18-20, additional companies have arranged for exhibit space until the number of exhibitors now totals 33, in addition to eight non-exhibiting members. The additional companies which have arranged for exhibits or membership since the publication of the earlier list include the following:

Exhibiting Companies

Chipman Chemical Company
Eaton Manufacturing Company
Kelsey Hayes Wheel Co.
Nordberg Manufacturing Company
Railroad Accessories Corporation

Non-Exhibiting Companies

American Hoist & Derrick Co.
American Steel & Wire Company
Creepcheck Co., Inc.
Cullen-Friestedt Co.
Fairmont Railway Motors
The Ohio Power Shovel Company

Mobile & Ohio and Employees Sign Agreement

Officers of the Mobile & Ohio and representatives of 2,500 employees of that road have signed a temporary wage agreement which will be effective until March 31, 1935. It provides for a gradual restoration of half of the 20 per cent pay reduction put into effect during the past few years. A five-per cent increase already made will continue in force until October 1, when another 2½ per cent will be added. On January 1, 1935, another 2½ per cent will be added, making the total increase 10 per cent. That rate will prevail until March 31, 1935, when there will be further negotiations with the National Mediation Board, which still maintains jurisdiction over the dispute. A threatened strike scheduled for August 21 was averted when the board, on August 17, accepted jurisdiction.

Wage Statistics for June

Class I railways, excluding switching and terminal companies, reported to the Interstate Commerce Commission a total of 1,054,426 employees as of the middle of the month of June. This was 96,894, or 10.12 per cent, greater than the number reported for June, 1933. The total compensation for the month was $129,533,847. The total number of hours paid for was 13.27 per cent greater and the total compensation 12.22 per cent greater in June, 1934, than in June, 1933. A comparison of the number of employees who received pay during the month with the total hours paid for shows an increase from 173 hours per employee in June, 1933, to 180 in June, 1934, or 4 per cent. In the case of machinists, the increase was from 148 to 166 hours, or 12.2 per cent. The total number of employees who received pay during the month was 1,164,707, an increase of 90,056 as compared with June, 1933.

Railroads Deny Extension of Drought Relief Rates

Reduced emergency freight rates on livestock feed, water and cattle to be shipped to grazing areas will not be extended, the President's Drought Relief Committee has been advised by H. G. Taylor, chairman of the Association of Western Railway Executives. The President's committee on August 17 requested that the emergency reductions be extended. This request was considered at a meeting of the railroad executives in Chicago on August 28. Following this meeting, the committee was notified that the request had been denied. The present reduced rates expire with September 4.

Emergency freight tariffs providing reduced rates on hay, coarse grains, livestock feeds and livestock were issued June 2, effective June 4. These reductions were extended each month, the last extension being made on August 4.

The reduced rates applying in the western territory provided a 50 per cent reduction on hay, 33⅓ per cent reduction on grains and mixed feeds and 50 per cent on water. The reductions also included 85 per cent of the rate on outbound cattle to other grazing areas and 15 per cent of the regular rate on the return movement.

Beatty Again Urges Rail Unification in Canada

E. W. Beatty, president and chairman of the Canadian Pacific, in Vancouver this week again expressed his belief in joint management of the Canadian National and Canadian Pacific as a solution for Canada's railway difficulties. Mr. Beatty did not favor the absorption of the government line by the Canadian Pacific. He urged instead a partnership agreement under which there would be no interference with the ownership of either company.

Net earnings of the properties jointly operated, Mr. Beatty said, would be divided in agreed proportions between the two properties. Both would apply these revenues to the payment of interest charges and other obligations. Mr. Beatty said that railway employees would find a "regularity and security of employment which, under present conditions, is denied them.

"There would," he continued, "be no question of one company securing an advantage at the expense of the other, because they would be a unit for operating purposes, and therefore each company would have a common interest in the profits from operation.

"Out of each dollar earned, the individual companies would receive an agreed and fair proportion, and, their interests in the result being joint, constructive or unfair practices would be impossible. The savings have been estimated at a figure which is, I think, conservative, because our own experience in the last four years has indicated very clearly the extent that economies are possible once they are definitely explored.

"We still have before us a great task of extending, unifying and perfecting the transportation organization of this country. To do so will require the investment of comparatively large amounts of capital. In addition, there is nothing which commends itself to me as being a more important task than to find means of cheapening the cost of transportation in Canada."

"The railway situation in this country is unsound and unhealthy," Mr. Beatty continued. "I do not know why we should continue to be sick just because we have heretofore been able to pay the doctor's bills.

"Lines of railway paralleling each other by thousands of miles, each one more than adequate to provide for the entire volume of traffic throughout that area represent an economic error of the gravest type. Two half-empty trains leaving one city to go to another city are perfect examples of economic folly and the spending of two dollars to provide transportation which would be paid for with one dollar is economic nonsense. Despite the truth of these statements there still remain in this country hundreds of miles of railway to be constructed, thousands of opportunites to run new trains, and room for the use of millions of dollars of new railway capital in many—and particularly not fully developed—parts of the country. We waste from fifty to seventy-five million dollars a year in the operation of unnecessary railway facilities, and I find it impossible to believe that the people of Canada will continue to accept economic waste on that scale merely because they fear some insubstantial bogey of too great power for a single corporation.

"We are at present deeply concerned with measures to undo so far as may be possible what has been ill-done. I have suggested that the situation is so serious as to require the most complete correction and that minor efforts to alleviate the trouble will prove insufficient. Until public opinion is ready to accept what I believe to be this logical view, the railways will continue to pool services and in other ways eliminate expense by co-operation, as far and as fast as they find practicable.

"I have held these views for more than 15 years and frankly, I wish I did not hold them. Nothing would give me more satisfaction than the conviction that our great railway companies could by joint co-operation measures, in fair competition and under proper regulation, follow their individual course, make their great contribution to the upbuilding of this Dominion, and still not waste millions of public and private moneys in dual and unnecessary operations."

Passenger Fare Hearings

The Interstate Commerce Commission has assigned its investigation of passenger fares and surcharges for hearing before Commissioner Porter and Examiner Koch at Washington, D. C., on November 16. In the interest of economy of time and expense to all concerned, the commission will avail itself of the voluminous data in respect of passenger service, fares, and costs and Pullman service, charges, and costs which are now being compiled under direction of the federal coordinator of transportation and, at the hearing, will

hear a witness qualified to offer and explain exhibits containing summarizations of such data for the period during and since 1923. It will also hear Director Lorenz, of its Bureau of Statistics, who will offer and be prepared to explain exhibits of a general nature, showing for the same period such data as passenger-miles per train-mile and per car-mile, passenger and freight operating revenues and expenses, etc., on Class I railroads in total, by district, and on the principal individual roads.

The fact that the foregoing witnesses will offer testimony as indicated is not to be understood as precluding any railroad or groups of railroads, or any one interested, from offering such testimony as may be desired and helpful to the commission. In order to determine the advisability of holding hearings at places other than Washington, D. C., request is made upon all parties desiring to be heard that they advise the commission of such desire not later than October 1, 1934.

Equipment and Supplies

LOCOMOTIVES

THE CHILEAN STATE RAILWAYS contemplate buying 10 locomotives of the 4-8-4 type.

THE MISSOURI SOUTHERN, reported in the *Railway Age* of May 12 as inquiring for a locomotive, has ordered a 70-ton, 500-hp., double-unit Diesel-electric locomotive for combination road and switching service from the Plymouth Locomotive Works, division of the Fate-Root-Heath Company, Plymouth, Ohio. Delivery will be made about November 15.

IRON AND STEEL

THE NEW YORK CENTRAL has ordered 320 tons of structural steel for a bridge at Porter, Ind., from the American Bridge Company.

THE ST. LOUIS SOUTHWESTERN has ordered 850 tons of structural steel for a bridge at Rob Roy, Ark., from the Virginia Bridge & Iron Company.

THE FEDERAL GOVERNMENT has awarded a contract to the Harmer Steel Products & Supply Co., Portland, Ore., for furnishing new 90-lb. tie plates and certain other track material for use in relocating about five miles of the main line of the Spokane Portland & Seattle in the vicinity of the Bonneville dam in Oregon. About five carloads of these materials will be required.

MOTOR VEHICLES

THE PACIFIC ELECTRIC has accepted delivery of nine 26-passenger motor coaches from the Twin Coach Corporation.

Supply Trade

P. H. Birckhead has been appointed general sales manager of the **Bucyrus-Erie Company,** South Milwaukee, Wis., in charge of domestic and foreign sales.

Arthur H. Smith, special representative of railroad sales in the East for the Youngstown Sheet & Tube Company has resigned to become associated with the **Kerite Insulated Wire & Cable Company, Inc.,** in its railway sales department, with headquarters at New York. Mr. Smith has been actively connected with railway sales since 1912, having been in the service of the Railroad Supply Company and the Railroad Materials Corporation previous to his connection with the Youngstown Company. A photograph of Mr. Smith and a sketch of his career were published in the *Railway Age* of May 12, 1934.

John C. Dilworth, for many years associated with the Dilworth Porter Company, Pittsburgh, Pa., has severed his association with that company and has joined the sales force of the **Carnegie Steel Company,** as manager of railway sales with headquarters at Pittsburgh. Mr. Dilworth will handle for the Carnegie Steel Company all railway specialties and supplies, a line with which he has been in close touch throughout his industrial career. He was graduated in 1905 from Sheffield Scientific School of Yale University, and also attended Shadyside Academy in Pittsburgh and St. Paul's Preparatory school. Mr. Dilworth went with the Dilworth Porter Company immediately after his graduation from Yale and for years was in the operating department of the industry, later taking up the sales end.

John C. Dilworth

The Baldwin Locomotive Works, Philadelphia, Pa., on September 17 will assume all sales and engineering of the products of its subsidiary, **The Whitcomb Locomotive Company,** Rochelle, Ill., and will establish an internal combustion locomotive section of its sales department, in charge of **H. H. Perry** as manager, assisted by **H. V. Huleguard.** Mr. Perry is now vice-president and general manager, and Mr. Huleguard sales manager of The Whitcomb Locomotive Company. The new section will handle all sales of Baldwin and Whitcomb internal combustion locomotives of all sizes, and sales of electric locomotives except to public service railroads. Whitcomb domestic sales agents will continue to sell in the name of Whitcomb, and the Whitcomb plant will continue the manufacture of Whitcomb products at Rochelle, in charge of **Thomas H. Mars** as superintendent. Orders for repair parts, and the servicing of Whitcomb products in the field, will be handled at Rochelle by **L. W. Wrenn** as Baldwin sales correspondent.

Code Authority Approved

The National Recovery Administration has announced its approval of the method of selecting the personnel of the Code authority for the locomotive appliance industry as follows: M. Schiller, vice-president, The Superheater Company, New York City; Henry Jude, assistant sales manager Consolidated Ashcroft-Hancock Company, Inc., New York City; Elliott Curtiss, president, U. S. Metallic Packing Company, Philadelphia, Pa., and G. W. Alcock, assistant secretary, Lima Locomotive Works, Inc., New York City.

Trade Practice Complaints Committee for Car Appliance Industry

The National Recovery Administration has approved a plan of organization and procedure for the trade practice complaints committee of the railway car appliances industry, a division of the fabricated metal products and manufacturing and metal finishing and metal coating industry. The members of the committee now authorized to proceed with the adjustment of trade practices are: S. L. Beymer, treasurer of the Hutchins Car Roofing Company, Detroit, Mich.; G. N. DeGuire, president of the Ajax Hand Brake Company, New York; C. D. Jenks, president of the Chicago-Cleveland Roofing Company, Chicago; and A. C. Moore, president of the Chicago Railway Equipment Company, Chicago.

OBITUARY

R. J. Himmelright, vice-president of the General Refractories Company, New York, died on August 30 in a hospital at Perth, Ontario. Mr. Himmelright was born at Wadsworth, Ohio, 51 years ago and was graduated in 1908 from Purdue University with the degree of mechanical engineer. While at Purdue he specialized in railroad work and following his graduation entered the service of the Lake Shore & Michigan Southern as a special apprentice. He then entered the service of the Locomotive Stoker Company as mechanical expert. In 1913 he went with the American Arch Company as traveling engineer and subsequently served successively as assistant to the manager of the service department, and then as manager of that department until March 1918, when he was elected vice-president in charge of the service and road development work in the United States and Canada. Mr. Himmelright left the service of the American Arch Company in 1927 and was one of the founders of the Railroad department of the General Refractories Company, serving since that time as vice-president of

that company, and also represented as manufacturers' agent in the Eastern part of the United States the Wilson Engineering Corporation, the Illinois Railway Equipment Company, the Standard Car Truck Company and the Graham-White

R. J. Himmelright

Sander Corporation. He had for many years taken an active part in the affairs of the June conventions at Atlantic City, N. J., having served as a member of the executive committee of the Railway Supply Manufacturers' Association and was a member of a number of clubs affiliated with the railroad interests.

Construction

CITY OF ST. LOUIS.—This city is contemplating the expenditure of $250,000 for completing the painting and repairing of the St. Louis Municipal Bridge across the Mississippi river, which has a railroad deck. More than $59,000 has been spent on the repair and painting of this bridge since October, 1933.

ELGIN, JOLIET & EASTERN.—A contract has been awarded to the Railroad Water and Coal Handling Company, Chicago, for the construction of a water softening plant at Joliet, Ill., having a capacity of 1,000 gal. per minute. The plant will treat water obtained from the Illinois Waterway.

PENNSYLVANIA.—A contract for the elevation of the tracks and the complete elimination of four grade crossings in Elmira, N. Y., has been awarded to Sinclair & Grigg, Philadelphia, Pa. The work will be started at once, commencing at South avenue, then proceeding to West Miller street, Main street and then completing what remains to be done at the LeFrance street crossing. This procedure is being followed, in order to avoid the closing of the streets with the consequent inconvenience to highway traffic. With the railroad raised at these crossings, the main tracks leading out of Southport yard will be elevated gradually for a distance of approximately 3,800 ft. All details of this undertaking have been approved by the Public Service Commission of New York and will entail an expenditure on the part of the P.R.R. of about $280,000.

Financial

BANGOR & AROOSTOOK.—*Refinancing.*—The directors of this company have called a special meeting of stockholders for October 2 to vote on a plan for refinancing of bond issues falling due in 1935, 1937 and 1939 by the issue of convertible bonds. The maturities are: $2,011,000 of Northern Maine Seaport bonds, due 1935; $866,000 of Medford extension first mortgage bonds, due 1937, and $1,188,000 of St. John river extension first mortgage bonds and $1,122,000 Washburn extension first mortgage bonds, due 1939.

"It is expected," the company has announced, "that satisfactory arrangements can be made with bankers to purchase $2,000,000 face value of the consolidated refunding mortgage bonds, stamped as convertible into common stock and subject to redemption, and the proceeds of such sale will be used by the company solely to pay off or purchase an equivalent face amount of 5 per cent bonds which mature in 1935, 1937 and 1939. In due course the company will endeavor to make arrangements with bankers to exchange consolidated refunding mortgage bonds, stamped as convertible into common stock and subject to redemption, for outstanding 5 per cent bonds which mature in 1937 and 1939; exchanges will be made on such terms and conditions as may be determined by the board of directors. If this plan of refinancing and/or retirement is consummated, even in part, interest costs to the company will be reduced, and when the bonds are converted into common capital stock the financial structure of the company will become materially improved by reason of a better balanced adjustment as between interest-bearing obligations and capital stock."

The directors will ask authority to provide that all or any part of $2,985,000 consolidated refunding mortgage bonds which may be certified by the trustee and delivered to the company may be converted at any time into common stock at not less than $52.50 a share and to make similar arrangements for all or any part of $2,515,000 consolidated refunding bonds now owned by the company.

CHESAPEAKE & OHIO.—*Equipment Certificates.*—A banking group headed by Stroud & Co., Inc., New York, is offering $1,200,000 of Chesapeake & Ohio equipment 4 per cent temporary registered certificates, dated May 29, 1934, and maturing $150,000 each six months from September 1, 1936, to March 1, 1940, dividends accruing from May 29, 1935. They are offered at 100½ flat for all maturities. The certificates being offered were purchased by the bankers from the R.F.C.

MINNEAPOLIS & ST. LOUIS.—*Reorganization.*—Reorganization of the Minneapolis & St. Louis, in receivership since 1923, will be effected through aid of a loan from the Reconstruction Finance Corporation. A plan was approved at a meeting of the reorganization committee on August 31, and a resolution was passed asking the court to postpone for 60 days the sale set for September 5. A subcommittee, consisting of F. J. Lisman, W. W. Colpitts and Philip Roosevelt, was appointed to effectuate the plan. This will be the first railroad reorganization with the aid of the R. F. C. The R. F. C. has agreed, subject to the approval of the Interstate Commerce Commission and other proper conditions, to lend $4,750,000, to be secured by a closed first mortgage and a lien of $8,000,000 on the entire property of the successor corporation, which is to be organized to take over substantially all of the property of the present company. The proceeds of this loan will be used to pay off receivers certificates at par and other obligations, such as preferred claims and the Merbian Junction-Albert Lea division bonds at a discount commensurate with the situation. The new company is to have ample working capital. The balance of the cash is to be used to pay organization expenses of the new company and all reorganization expense, which latter, however, are subject to approval in the federal court, the R. F. C. and the I. C. C. Holders of the six other bond issues of the system are to receive non-cumulative adjustment bonds and common stock on a basis which has been arrived at by arbitration.

ST. LOUIS-SAN FRANCISCO.—*Defers Interest.*—The trustees of this company have advised holders of Kansas City, Memphis & Birmingham bonds that it will be unable to meet interest payments due on September 1. The bonds matured March 1 but interest has been paid to stave off foreclosure. The statement by the trustees reads in part as follows:

"The undersigned, trustees of St. Louis-San Francisco Railway Co., debtor, have given careful consideration to the question of the payment of interest on the above bonds for the six months ended September 1, 1934, and in the present situation they do not feel that they would be justified in applying to the court at this time for authority to make this payment.

"The recent wage increase, the possible burden of the pension act passed by the recent Congress, the uncertainty as to the imposition of additional taxes, in the nature of an occupational tax now proposed by an ordinance pending before the municipal council of the City of St. Louis on each railroad per mile for all tracks inside the city limits, and another proposed ordinance to assess a tax on gross incomes of all corporations and individuals, together with the destruction of crops as a result of the drouth in the Frisco territory, all make it impossible to foretell what the earnings will be. The trustees being unable to secure loans, it is absolutely necessary to conserve their cash to insure the payment of actual operating expenses."

Average Prices of Stocks and of Bonds

	Sept. 4	Last week	Last year
Average price of 20 representative railway stocks..	35.48	36.88	47.57
Average price of 20 representative railway bonds..	73.33	74.26	72.15

Dividends Declared

Beech Creek.—50c, quarterly, payable October 1 to holders of record September 15.

Lackawanna R. R. of New Jersey.—4 Per Cent Guaranteed, $1.00, quarterly, payable October 1 to holders of record September 8.

Old Colony.—$1.75, quarterly, payable October 1 to holders of record September 15.

Philadelphia & Trenton.—$2.50, quarterly, payable October 10 to holders of record October 1.

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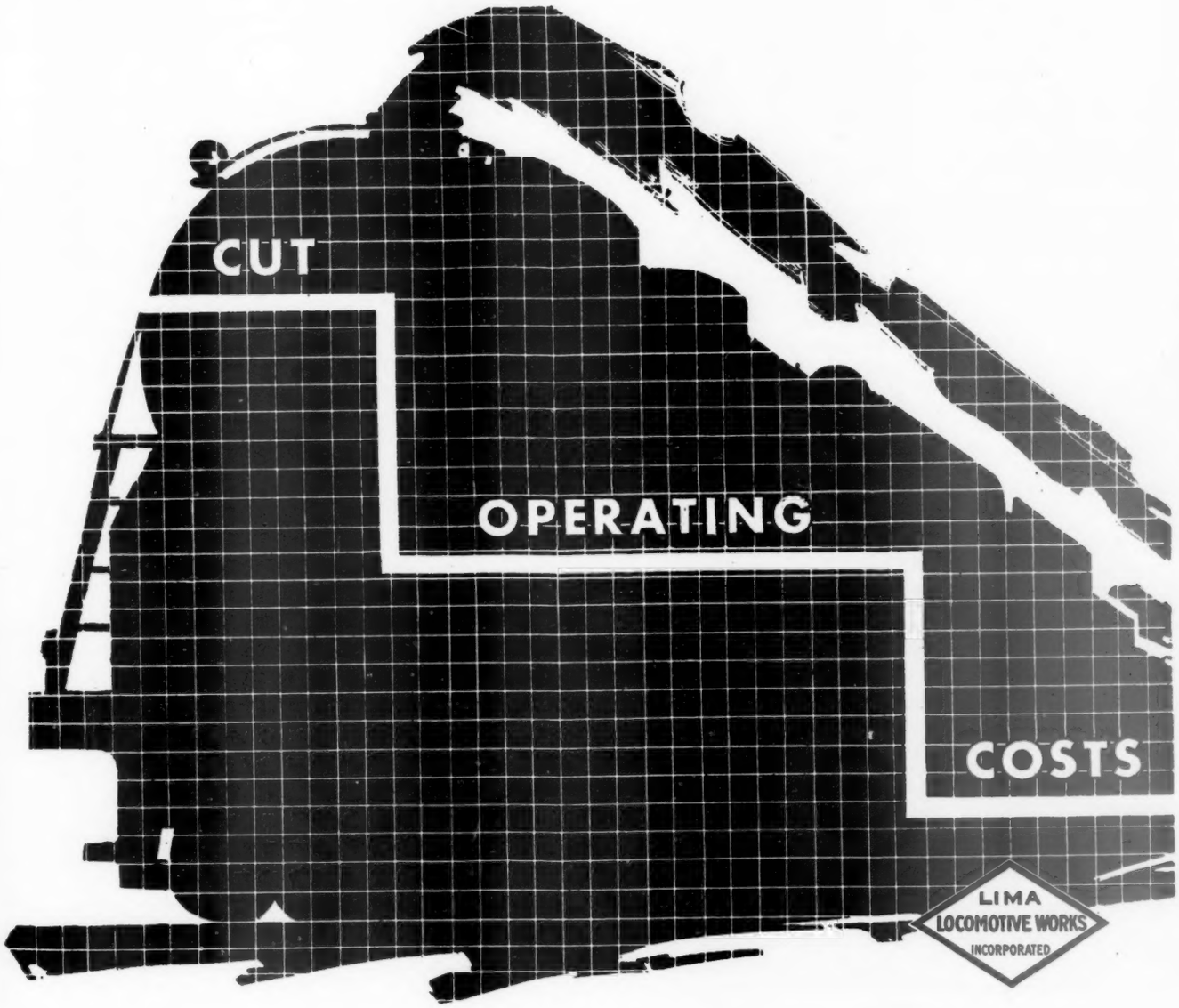
SUPER-POWER LOCOMOTIVES



- A study of actual operating data on one road showed that Super-Power Locomotives reduced operating costs 34%.

Decreased Fuel Consumption of 37.1% (Per 1000 Gross Ton Miles) Was An Important Element In This Operating Saving.

SUPER-POWER LOCOMOTIVES PRODUCE MAXIMUM GROSS TON MILES PER TRAIN HOUR WITH MINIMUM FUEL CONSUMPTION

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

P. J. Stock, assistant to the comptroller of the Minneapolis, St. Paul & Sault Ste. Marie, has been appointed assistant secretary, with headquarters as before at Minneapolis, Minn.

OPERATING

Manuel Hernandez, acting superintendent of the Vera Cruz Terminal Company, Vera Cruz, Mex., has been appointed superintendent.

William J. Whalen, trainmaster on the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Dubuque, Ia., has been promoted to assistant superintendent of the Iowa division, with headquarters at Perry, Iowa, succeeding **Ray C. Dodds,** who has been transferred to the Kansas City Terminals, where he replaces **J. F. Anderson,** deceased. **John H. Stewart,** chief clerk in the general offices at Chicago, has been promoted to trainmaster of the Kansas City division, with headquarters at Ottumwa, Iowa, succeeding **H. C. Munson,** who has been transferred to Dubuque, succeeding Mr. Whalen.

MECHANICAL

W. L. Boggs has been appointed road foreman of engines for the Erie with headquarters at Meadville, Pa., succeeding **F. M. Steele,** retired.

The motive power and equipment departments of the Buffalo and Syracuse and Utica divisions of the Delaware, Lackawanna & Western have been consolidated. **M. A. Quinn,** master mechanic with headquarters at Binghamton, N. Y., has been appointed master mechanic at Buffalo, N. Y. **A. R. Manderson** has been appointed assistant master mechanic also at Buffalo.

TRAFFIC

E. G. Heberer, assistant general freight agent of the Litchfield & Madison, has been promoted to general freight agent, with headquarters as before at St. Louis, Mo.

Sam Jones, acting assistant freight traffic manager for the Seaboard Air Line, with headquarters at Tampa, Fla., has been appointed assistant freight traffic manager at the same point, suceeding **J. W. Booth,** deceased. The position of acting assistant freight traffic manager, Tampa, Fla., has been abolished.

R. M. Mondragon, general agent on the Mexican Railway at Mexico City, Mex., has been promoted to general freight and passenger agent, with the same headquarters, succeeding **G. A. O'Brien,** resigned. **J. F. Lecanda** has been appointed general agent at Mexico City, succeeding Mr. Mondragon.

W. M. Carey, assistant general freight agent on the Denver & Rio Grande Western, has been promoted to the newly-created position of assistant freight traffic manager, with headquarters as before at Denver, Colo. **T. K. Earley** has been appointed assistant general freight agent at Denver to replace Mr. Carey.

ENGINEERING AND SIGNALING

Lorenzo Perez Castro, formerly executive vice-president of the National Railways of Mexico, has been appointed resident engineer of the Mexican Railway, with headquarters at Mexico City, Mex., succeeding **A. M. Willats,** who has resigned.

E. L. Potars, assistant engineer on the Chicago, Burlington & Quincy in charge of this company's rail flaw detector car and formerly a division engineer on this road, has been promoted to district engineer maintenance of way, Lines West of the Missouri River, with headquarters at Omaha, Neb., succeeding **E. H. Piper,** who has been transferred to the operating department.

H. L. Hunter, who was assistant engineer in charge of the recently completed track elevation project of the Atchison, Topeka & Santa Fe, at Oklahoma City, Okla., has been appointed office engineer in the chief engineer's office at Topeka, Kan., succeeding **W. A. Kingman,** who has been appointed office engineer on the Middle division, with headquarters at Newton, Kan.

G. Voelkner, supervisor of telegraph and telephone of the Chicago & Western Indiana and the Belt Railway of Chicago, with headquarters at Chicago, has been appointed to the newly-created position of signal and electrical engineer. He will also retain jurisdiction over communications. Mr. Voelkner entered the service of the Chicago & Western Indiana in June, 1908, as a switchboard operator at the Forty-Eighth Street power plant at Chicago. In the following year he was advanced to foreman in charge of electrical maintenance and in 1910 he was appointed general foreman in charge of electrical construction and maintenance. From 1912 to 1914 Mr. Voelkner was in charge of all electrical work at the Clearing yard of the Belt Railway, which was then under construction. In 1915 he was made chief electrician of the Belt Railway, later also being placed in charge of the signal department. He was promoted to supervisor of telegraph and telephone of the C.& W. I. and the Belt Railway in November, 1933, and held this position until his recent appointment.

OBITUARY

James P. Houston, general manager of the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn., died there on September 3. Mr. Houston first entered railway service with the Chicago, Burlington & Quincy at the age of 10. In 1914 he entered the employ of the Minneapolis & St. Louis, with which company he remained until his death. A photograph of Mr. Houston and a sketch of his railway career appeared in the *Railway Age* of November 11, 1933, in connection with his appointment as general manager.

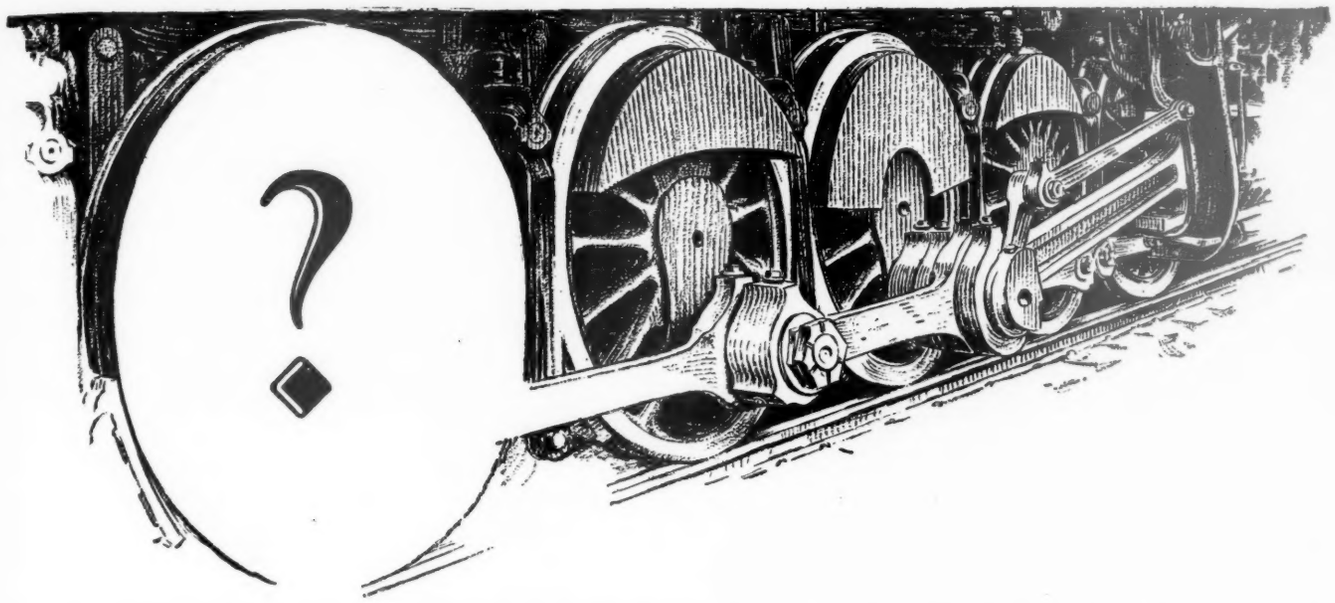
J. F. Anderson, assistant superintendent of the Kansas City Terminals of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Kansas City, Mo., died on August 8.

Charles Patton, treasurer of the Cincinnati, New Orleans & Texas Pacific (part of the Southern), with headquarters at Cincinnati, Ohio, died in that city on September 2, following a heart attack. Mr. Patton was born on December 12, 1857, at Covington, Ky., and entered railway service in 1874 as an office messenger with the Cincinnati Southern (now the C. N. O. & T. P.). In 1876 he was made chief clerk to the treasurer and in 1879 he was further advanced to assistant paymaster. Two years later Mr. Patton was promoted to paymaster and in 1894 he was appointed cashier. After serving as cashier and paymaster from 1895 to 1897, he was advanced to treasurer in the latter year, which position he held until his death.

J. W. Roberts, manager perishable traffic for the Pennsylvania, with headquarters in New York, died in that city on September 5, as the result of a fall. Mr. Roberts was also president of the New York Traffic club. He was born at Buckhannon, W. Va., on February 10, 1872, and was educated in the public and high schools and at Indiana College. He entered railway service in 1893 with the Lake Erie & Western (now part of the New York, Chicago & St. Louis), and remained with that company until February, 1900. During the following three years he was in the service of the Cleveland, Cincinnati, Chicago & St. Louis, and was then for a short time with the Missouri-Kansas-Texas. During the time he served with these three companies, he was, successively, ticket agent, telegraph operator, freight house platform foreman, freight cashier, station agent, yard clerk, yardmaster, division and system car distributor, train dispatcher, and chief clerk to three different officers. In 1904 Mr. Roberts entered the service of the Vandalia (now part of the Pennsylvania). He rose through successive promotions to the position of superintendent of car service in 1915. He later became general superintendent of passenger transportation, lines west of Pittsburgh, and superintendent of freight transportation, continuing in the latter position during Federal control. Upon the termination of Federal control, he became general superintendent of transportation, Northwestern region, and in May, 1923, was appointed general superintendent of transportation of the Eastern region. In 1928 he was appointed assistant vice-president with headquarters at the Pennsylvania's Produce Terminal in New York. Later when the P.R.R. executive set-up was reorganized Mr. Roberts became traffic manager in charge of perishable freight.

Tables of Revenues and Expenses of Railways begin on next left-hand page

DRIVING WHEELS ARE EXPENSIVE



IN FIRST COST IN MAINTENANCE IN HAULING COSTS

In any locomotive the thing you buy is ability to pile up ton-miles at the lowest possible cost.

This calls for high tractive effort to get started quickly and for the hard spots and for sustained capacity to provide speed over the road.

That locomotive is most economical to operate and to maintain that develops adequate power for average road conditions and utilizes the added power of The Locomotive Booster to start smoothly and quickly and to help over the hard spots.

The Booster capitalizes idle weight and spare steam.

Franklin parts fit—in applying them there is no labor cost for fitting. They are built to original dimensions of carefully selected materials—they avoid road failures and excessive maintenance.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Revenues and Expenses of Railways

For Month of July and Seven Months of Calendar Year 1934

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1933
Akron, Canton & Youngstown	July	171	$118,866	$53	$128,154	$21,456	$16,632	$7,269	$42,583	$7,682	$95,308	74.4	$32,846	$23,171	$11,162	$59,992
	7 mos.	171	985,082	248	1,051,888	135,067	102,974	53,129	310,274	54,338	655,436	62.3	396,452	321,420	212,628	183,305
Alton	July	949	987,926	157,960	1,285,293	192,450	173,722	45,255	434,694	40,024	896,388	69.7	388,905	314,116	155,301	259,772
	7 mos.	950	5,431,055	914,476	7,411,331	1,000,734	1,129,702	318,594	2,956,320	300,657	5,778,330	78.0	1,633,001	1,127,098	167,579	766,558
Atchison, Topeka & Santa Fe	July	9,532	8,916,884	1,081,788	10,708,527	1,131,198	2,345,815	317,229	3,149,914	389,071	7,333,428	68.5	3,375,099	2,313,599	2,440,294	2,300,208
	7 mos.	9,542	49,377,062	6,401,094	61,089,489	7,772,729	14,706,449	2,132,743	20,680,188	2,561,721	47,864,301	78.4	13,225,188	7,528,573	8,254,951	4,362,826
Gulf, Colorado & Santa Fe	July	1,918	1,116,574	54,671	1,239,076	152,607	167,860	42,033	401,157	61,971	824,690	66.6	414,386	330,502	269,718	159,291
	7 mos.	1,918	5,962,682	313,445	6,797,994	1,389,287	1,702,683	334,126	2,615,130	440,104	6,480,069	95.3	317,925	—261,302	—797,773	—564,392
Panhandle & Santa Fe	July	1,878	960,695	25,340	1,028,194	90,186	112,800	15,446	221,392	29,867	469,189	45.6	559,005	513,517	444,706	376,776
	7 mos.	1,878	4,662,930	169,819	5,160,930	606,024	1,056,031	120,470	1,442,979	220,659	3,445,487	66.8	1,715,443	1,404,440	895,120	449,582
Atlanta & West Point	July	93	74,073	19,260	109,066	20,180	28,042	6,868	53,911	7,709	119,019	109.1	—9,953	—17,156	—28,294	11,516
	7 mos.	93	562,781	116,675	811,923	137,342	189,659	47,285	342,742	53,051	785,268	96.7	26,655	—23,871	—100,241	—122,185
Western of Alabama	July	133	63,712	19,903	94,081	19,120	32,616	6,929	46,067	7,105	113,511	120.6	—19,430	—27,430	—20,692	—4,097
	7 mos.	133	530,184	120,331	745,464	142,091	222,520	47,800	308,988	49,787	783,197	105.1	—37,733	—93,787	—54,239	—28,147
Atlanta, Birmingham & Coast	July	639	239,969	8,788	273,860	37,826	50,078	21,362	100,988	15,989	235,732	86.1	38,128	25,527	14,408	39,583
	7 mos.	639	1,457,982	41,919	1,699,219	282,787	362,628	149,274	694,375	110,581	1,666,817	98.1	32,401	—55,401	—144,707	—128,600
Atlantic Coast Line	July	5,145	1,825,319	244,816	2,302,402	412,382	671,924	112,477	1,119,200	126,851	2,455,925	106.7	—153,523	—354,169	—314,818	16,127
	7 mos.	5,145	18,940,141	3,520,583	25,314,673	3,006,286	4,696,978	799,305	8,980,460	903,233	18,626,030	73.6	6,688,643	3,785,746	3,061,216	3,380,784
Charleston & Western Carolina	July	342	138,820	1,908	144,178	20,540	25,153	5,843	51,015	4,776	107,327	74.4	36,851	19,792	19,867	70,364
	7 mos.	342	1,165,845	8,557	1,204,879	164,076	175,202	39,617	379,215	32,928	791,038	65.7	413,841	295,716	273,863	299,630
Baltimore & Ohio	July	6,386	10,033,177	940,056	11,654,709	1,147,451	2,401,511	359,252	3,913,322	565,822	8,497,762	72.9	3,156,947	2,498,937	2,166,003	4,232,308
	7 mos.	6,384	70,376,127	5,812,627	81,359,468	7,280,426	18,109,012	2,477,368	28,022,087	3,925,554	60,472,150	74.3	20,887,318	16,134,510	13,741,861	15,271,273
Staten Island Rapid Transit	July	23	41,065	95,371	145,820	15,517	13,261	1,713	81,670	13,084	125,245	85.9	20,575	3,925	—11,217	6,168
	7 mos.	23	371,358	585,804	1,012,519	76,477	91,019	12,121	570,055	90,153	839,825	82.9	172,694	63,887	—55,753	11,924
Bangor & Aroostook	July	603	185,100	13,641	213,817	97,149	82,046	6,300	86,485	22,404	295,582	138.2	—81,765	—92,251	—74,573	—69,085
	7 mos.	603	3,540,895	196,040	3,877,376	688,272	623,198	33,797	887,877	160,957	2,399,908	61.9	1,477,468	1,149,373	1,120,870	1,212,874
Bessemer & Lake Erie	July	225	996,160	723	1,003,474	141,984	268,038	10,551	171,010	34,745	626,026	62.4	377,448	325,433	320,657	558,165
	7 mos.	225	4,771,778	5,408	4,838,130	657,184	1,982,552	76,929	972,925	235,687	3,923,846	81.1	914,284	732,741	820,432	666,963
Boston & Maine	July	2,038	2,230,090	652,691	3,347,367	539,887	493,907	66,681	1,375,765	171,300	2,657,723	79.4	689,644	479,736	318,498	920,777
	7 mos.	2,053	17,476,551	4,036,623	25,061,291	3,681,731	3,990,842	408,563	10,040,693	1,191,322	19,381,121	77.3	5,680,170	4,297,172	3,095,600	4,014,793
Bklyn. Eastern Dist. Term	July	11.27	78,796	.....	80,175	5,413	9,506	573	25,960	4,667	46,119	57.5	34,056	27,578	27,578	40,873
	7 mos.	11.27	543,920	.....	558,687	30,410	55,389	2,588	182,850	34,517	305,754	54.7	252,933	207,273	207,273	198,216
Burlington-Rock Island	July	280	59,071	4,305	68,151	12,730	12,950	4,256	40,261	7,545	77,742	114.1	—9,591	—14,958	—21,702	1,331
	7 mos.	280	403,857	13,198	446,188	79,283	89,091	26,234	257,133	50,382	502,119	112.5	—55,931	—90,225	—147,797	—74,444
Cambria & Indiana	July	37	80,932	.....	81,117	9,524	40,657	363	11,650	5,675	67,869	83.67	13,248	—438	59,181	93,759
	7 mos.	37	598,678	.....	600,055	51,529	276,980	2,723	80,007	47,916	459,155	76.52	140,900	42,163	497,349	536,201
Canadian Pac. Lines in Maine	July	233	71,361	18,495	103,540	38,371	21,662	8,880	45,071	6,549	121,384	117.2	—17,844	—23,844	—37,418	—44,424
	7 mos.	233	1,139,120	111,078	1,340,384	262,637	231,072	61,469	502,523	42,379	1,104,604	82.4	235,780	189,738	31,096	—34,833
Canadian Pac. Lines in Vermont	July	85	42,189	12,748	71,666	19,113	18,422	3,968	49,594	4,153	95,589	133.4	—23,923	—29,023	—44,413	—26,187
	7 mos.	85	389,402	71,316	563,882	104,033	144,052	27,425	376,399	28,548	682,513	121.0	—118,631	—154,346	—271,537	—257,333
Central of Georgia	July	1,926	943,846	101,165	1,149,711	135,626	236,277	47,125	459,968	70,506	952,879	82.9	196,832	123,501	94,510	203,200
	7 mos.	1,926	6,239,627	674,950	7,839,913	964,684	1,822,611	338,752	3,114,579	485,350	6,762,627	86.3	1,077,286	562,763	273,620	298,210
Central New Jersey	July	689	1,662,846	488,096	2,289,517	154,478	465,643	53,385	957,971	91,048	1,738,131	75.9	551,386	33,155	—47,363	50,779
	7 mos.	689	13,522,168	2,572,058	17,171,184	1,006,109	3,308,851	303,568	6,827,594	617,097	12,166,713	70.9	5,004,471	2,959,795	2,255,195	1,397,290
Central Vermont	July	455	328,414	42,806	419,745	94,615	75,508	13,613	187,463	21,117	392,406	93.5	27,339	11,939	3,983	102,919
	7 mos.	455	2,407,318	257,485	2,948,193	559,455	633,801	91,434	1,373,976	141,613	2,800,621	95.0	147,572	35,314	—34,290	94,148
Chesapeake & Ohio	July	3,143	8,246,756	263,525	8,876,222	949,840	1,638,946	179,260	2,060,110	297,695	5,139,276	57.9	3,736,946	2,883,593	2,709,388	4,019,067
	7 mos.	3,130	60,042,663	1,646,123	63,971,008	6,641,278	12,075,910	1,154,840	14,043,058	1,961,471	35,954,853	56.2	28,016,155	21,926,660	21,114,114	18,749,948
Chicago & Eastern Illinois	July	938	834,254	121,584	1,081,826	136,474	163,613	52,258	413,115	54,092	828,225	76.6	253,601	203,528	73,099	118,319
	7 mos.	938	5,810,970	613,142	7,283,297	900,291	1,192,733	349,971	2,960,158	387,166	5,818,188	79.9	1,465,109	1,001,096	153,065	—240,378
Chicago & Illinois Midland	July	131	224,009	1,013	237,652	35,036	42,633	14,772	59,369	15,444	167,254	70.4	70,398	61,628	64,477	107,289
	7 mos.	131	1,541,804	7,014	1,601,642	190,229	338,776	107,959	428,628	111,670	1,177,265	73.5	424,377	372,233	398,126	534,086
Chicago & North Western	July	8,442	5,190,721	879,953	6,743,503	1,106,708	1,273,734	190,287	2,551,029	263,821	5,417,080	80.3	1,326,423	800,432	551,863	1,803,307
	7 mos.	8,442	33,384,170	4,773,142	43,014,519	6,437,933	9,713,308	1,102,575	17,021,964	1,879,998	36,351,119	84.5	6,663,400	2,826,240	1,471,149	1,360,743
Chicago, Burlington & Quincy	July	9,182	5,703,262	762,223	7,157,271	844,297	967,696	230,459	2,403,878	291,752	4,818,475	67.3	2,338,796	1,876,430	1,570,050	2,215,867
	7 mos.	9,182	36,040,393	3,530,685	44,433,419	5,728,861	7,250,165	1,533,241	16,116,919	2,000,013	32,940,903	74.1	11,492,516	7,503,151	5,505,372	5,479,646
Chicago Great Western	July	1,518	1,121,856	50,309	1,281,655	176,656	182,020	51,955	494,225	47,451	952,087	74.3	329,568	273,096	88,470	285,498
	7 mos.	1,518	7,567,793	284,014	8,414,656	1,101,157	1,320,866	357,672	3,292,124	328,699	6,394,074	76.0	2,020,582	1,630,549	360,167	283,980
Chicago, Indianapolis & Louisville	July	644	499,606	47,598	613,492	57,077	129,555	25,580	251,541	24,181	493,253	80.4	120,239	72,023	—26,778	5,546
	7 mos.	644	3,411,219	307,379	4,235,903	373,751	1,004,216	173,958	1,790,187	166,314	3,547,245	83.7	688,658	363,145	—298,545	—183,081

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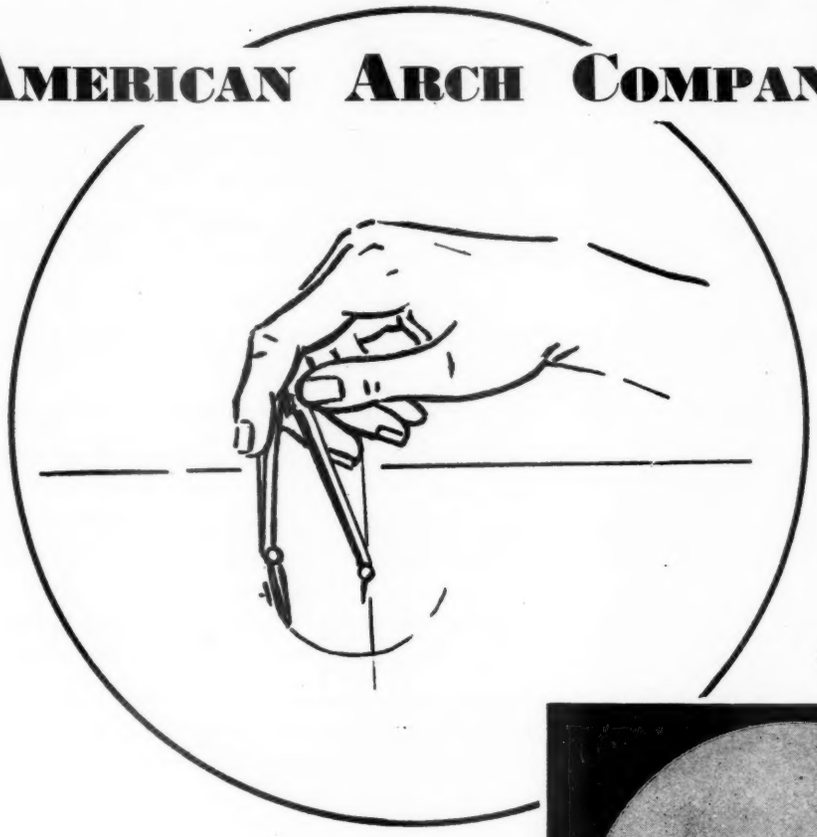
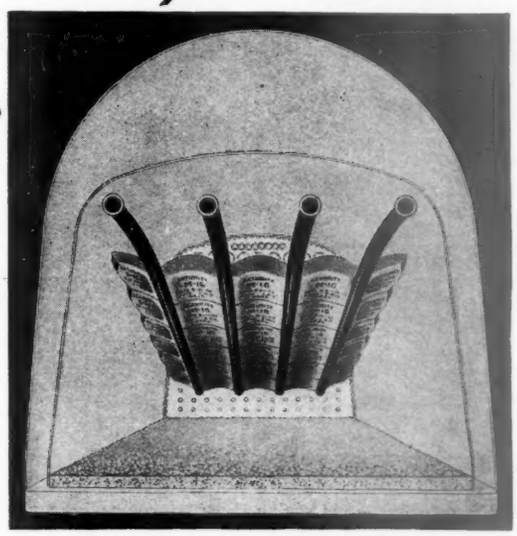
DESIGN IS THE FIRST STEP IN AMERICAN ARCH COMPANY SERVICE



There's More to SECURITY ARCHES Than Just Brick



FROM the drawing boards of the American Arch Company have come locomotive arches for practically all of the locomotives now in service.

This engineering service has also extended to research into improved brick, methods of support and radically different arch constructions. By concentrating on locomotive arches the American Arch Company has brought the art to its present high state of development.

While most important, this engineering service is only one link in the chain of a satisfactory Arch brick supply.

In addition, American Arch Company has the extended experience in servicing locomotive arches that is so essential to economical arch brick performance.

Brick alone do not make an arch. From American Arch Company you get all the other elements that result in arch satisfaction.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

NRA MEMBER U.S. WE DO OUR PART

AMERICAN ARCH CO.
INCORPORATED

Locomotive Combustion Specialists » » »

Revenues and Expenses of Railways

FOR MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1933
Chicago, Mil., St. Paul & Pacific	July	11,162	$6,282,900	$588,718	$7,583,749	$1,456,493	$1,442,191	$220,936	$2,816,894	$253,951	$6,229,492	82.1	$1,354,257	$814,160	$314,738	$1,359,143
	7 mos.	11,175	40,675,384	2,890,877	48,535,963	6,372,431	10,069,159	1,401,061	18,862,703	1,765,294	38,645,766	79.6	9,890,197	5,845,406	2,903,167	4,285,721
Chicago, Rock Island & Pacific	July	7,593	4,515,802	506,063	5,496,715	672,349	1,319,593	186,125	2,216,094	266,480	4,720,215	85.9	776,500	363,019	44,553	727,525
	7 mos.	7,606	29,634,182	3,097,198	36,411,195	3,762,172	8,816,331	1,246,982	14,827,314	1,926,875	30,990,457	85.1	5,420,738	2,513,399	561,422	2,212,405
Chicago, Rock Island & Gulf	July	721	391,980	22,520	413,116	52,016	41,818	16,586	111,583	19,499	244,149	59.1	168,967	146,529	81,910	—453
	7 mos.	721	1,952,169	133,677	2,119,024	279,509	271,753	109,750	777,929	129,405	1,585,952	74.8	533,072	382,087	—23,430	—138,406
Chi., St. Paul, Minn. & Omaha	July	1,663	1,015,537	140,851	1,259,103	151,000	191,144	32,375	574,316	66,355	1,025,557	81.5	233,546	160,444	81,497	369,494
	7 mos.	1,663	6,785,248	737,971	8,175,352	895,364	1,367,577	224,177	3,847,876	462,988	6,856,847	83.9	1,318,505	795,812	306,209	611,818
Clinchfield R. R.	July	309	342,548	4,064	350,579	37,714	83,292	15,190	75,636	15,777	227,609	64.9	122,970	77,969	104,573	202,818
	7 mos.	309	3,131,046	22,199	3,189,545	281,652	710,905	109,230	568,745	93,258	1,763,790	55.3	1,425,755	1,140,686	1,333,682	948,158
Colorado & Southern	July	1,023	418,212	36,055	497,351	57,354	93,955	12,784	176,660	32,012	374,627	75.3	122,724	65,927	47,066	16,384
	7 mos.	1,028	2,488,432	160,827	2,956,013	501,799	630,956	81,191	1,147,288	222,001	2,587,066	87.5	368,947	—26,955	—135,771	—242,684
Ft. Worth & Denver City	July	804	655,590	47,104	764,023	46,195	63,962	18,653	159,495	34,144	324,536	42.5	439,487	409,351	369,226	284,769
	7 mos.	804	2,831,724	231,717	3,463,295	238,560	474,790	113,439	988,281	222,010	2,048,564	59.2	1,414,731	1,203,189	993,639	726,767
Columbus & Greenville	July	167	51,008	6,416	62,028	13,124	9,888	3,872	29,429	8,874	65,187	105.1	—3,159	—5,444	—2,047	15,844
	7 mos.	167	392,798	36,781	465,817	95,708	74,837	24,991	208,149	61,850	465,525	99.9	292	—18,184	—9,243	30,959
Delaware & Hudson	July	848	1,462,090	119,708	1,694,471	302,100	526,801	57,048	671,968	134,812	1,702,765	100.5	—8,294	—81,634	—75,646	208,585
	7 mos.	848	12,720,157	630,489	14,075,531	1,978,258	3,691,205	339,668	5,399,266	937,924	12,382,462	88.0	1,693,069	1,197,537	1,293,930	—476,341
Delaware, Lackawanna & Western	July	992	2,370,118	591,533	3,391,097	433,233	696,568	114,478	1,562,582	155,459	2,982,052	87.9	409,045	58,112	29,980	633,904
	7 mos.	993	19,659,694	3,816,712	26,682,468	2,157,777	5,296,364	757,027	11,607,254	1,072,533	21,049,954	78.9	5,632,514	3,176,024	3,003,252	1,501,421
Denver & Rio Grande Western	July	2,636	1,313,780	124,714	1,546,264	189,002	374,092	47,306	519,669	80,165	1,222,993	79.1	323,271	173,076	133,389	196,485
	7 mos.	2,505	8,533,013	477,317	9,617,361	1,098,183	2,393,911	314,741	3,168,708	544,160	7,556,270	78.6	2,061,091	1,008,779	963,493	778,333
Denver & Salt Lake	July	232	79,636	4,325	93,292	15,803	22,462	1,904	22,639	11,201	73,117	78.4	20,175	7,175	52,553	42,983
	7 mos.	232	567,003	24,253	657,849	81,891	142,341	10,974	155,026	76,443	465,783	70.8	192,066	96,028	174,558	229,163
Detroit & Mackinac	July	242	39,310	3,437	48,953	12,024	8,708	834	20,992	3,431	45,986	93.9	2,967	21,824	20,970	—1,539
	7 mos.	242	267,003	19,445	326,416	69,942	53,387	6,025	145,311	24,136	298,756	91.5	27,660	58,273	49,350	—7,035
Detroit & Toledo Shore Line	July	50	180,366	.....	181,674	18,921	22,985	7,353	52,402	6,467	108,123	59.5	73,551	58,588	23,910	48,390
	7 mos.	50	1,859,663	.....	1,871,657	144,357	153,411	47,572	456,213	45,179	846,661	45.2	1,024,996	861,002	529,900	307,822
Detroit, Toledo & Ironton	July	472	384,403	285	396,847	42,060	63,137	9,583	104,802	18,064	233,738	58.9	163,109	117,186	95,119	127,269
	7 mos.	472	3,682,351	1,879	3,798,775	325,630	497,029	69,142	826,821	120,889	1,814,712	47.8	1,984,063	1,594,043	1,413,862	524,469
Duluth, Missabe & Northern	July	563	1,553,739	2,724	1,798,984	142,952	198,852	3,679	260,789	41,323	647,595	36.0	1,151,389	1,023,816	1,023,857	866,907
	7 mos.	563	4,405,277	19,288	5,125,081	907,154	1,538,924	22,823	1,233,816	270,880	3,973,545	77.5	1,151,536	606,421	611,052	171,002
Duluth, Winnipeg & Pacific	July	178	58,614	5,357	67,100	23,055	25,989	2,037	32,898	4,207	88,082	131.3	—20,982	—24,252	—15,556	18,886
	7 mos.	178	461,373	17,923	497,825	126,333	132,490	13,303	236,081	35,329	543,398	109.2	—45,573	—71,609	—16,828	—10,516
Elgin, Joliet & Eastern	July	446	639,908	.....	715,859	110,793	212,998	12,896	320,689	57,273	714,640	99.8	1,219	—88,291	—123,466	273,150
	7 mos.	446	5,832,953	6	6,483,152	657,220	1,578,849	86,846	2,407,265	308,315	5,038,263	77.7	1,444,889	871,897	576,194	318,744
Erie Railroad	July	2,315	5,418,037	497,490	6,398,008	683,194	1,334,106	171,951	2,237,579	281,099	4,713,772	73.7	1,684,236	1,349,950	953,090	1,764,994
	7 mos.	2,315	38,495,435	2,991,169	44,955,123	4,041,235	9,001,558	1,122,366	15,721,064	1,951,736	31,894,569	70.9	13,060,554	10,714,927	8,433,404	6,455,999
New Jersey & New York	July	45	13,470	50,346	65,568	10,418	22,301	1,243	45,352	3,486	82,800	126.3	—17,232	—21,382	—35,821	—26,710
	7 mos.	45	116,776	376,017	506,713	55,449	167,951	8,678	350,111	25,035	607,224	119.8	—100,511	—129,588	—242,629	—185,372
N. Y., Susquehanna & Western	July	215	242,515	27,295	283,791	42,997	57,017	4,532	111,014	12,635	228,195	80.4	55,596	32,170	15,840	43,328
	7 mos.	215	1,935,463	185,485	2,233,178	216,586	412,920	30,435	866,053	84,047	1,610,040	72.1	623,138	456,107	324,743	140,830
Florida East Coast	July	812	189,580	46,748	282,480	111,256	122,563	20,010	145,281	37,858	438,375	155.2	—155,895	—232,792	—252,427	—269,799
	7 mos.	828	3,352,369	1,288,312	5,302,867	785,613	915,960	142,998	1,514,388	261,445	3,675,718	69.3	1,627,149	1,098,087	745,400	575,657
Fort Smith & Western	July	249	46,577	1,056	50,758	13,602	8,776	5,172	17,885	4,129	49,709	97.9	1,049	—959	—6,490	—6,539
	7 mos.	249	331,657	7,144	365,436	97,983	67,991	36,673	127,553	28,014	352,328	96.4	13,108	1,880	—31,314	—31,068
Georgia	July	329	238,901	17,831	274,504	28,907	51,833	16,408	116,262	12,407	226,339	82.5	48,165	42,874	46,443	88,648
	7 mos.	329	1,585,891	95,501	1,839,965	193,541	402,910	113,956	774,042	92,656	1,579,638	85.8	260,327	223,280	261,966	323,261
Georgia & Florida	July	465	67,830	2,999	75,004	21,503	19,867	7,742	33,613	5,883	88,527	118.0	—13,523	—19,529	—21,997	6,675
	7 mos.	465	577,342	15,279	628,108	150,887	125,601	53,131	243,743	38,966	612,997	97.6	15,111	—21,357	—41,109	—60,921
Grand Trunk Western	July	1,006	1,301,545	91,793	1,493,828	268,627	302,213	35,375	617,680	84,607	1,311,481	87.8	182,347	106,614	32,313	3,645
	7 mos.	1,007	9,718,832	428,413	10,939,651	1,455,421	2,210,853	231,035	4,408,333	558,781	8,888,602	81.3	2,051,049	1,515,460	718,693	—457,994
Canadian Nat'l Lines in New Eng.	July	172	85,745	13,188	106,133	26,179	38,480	3,063	55,078	9,337	132,629	124.9	—26,496	—34,491	—72,797	—59,603
	7 mos.	172	520,158	42,810	619,459	156,935	143,559	19,346	376,310	63,983	763,505	123.2	—144,046	—219,904	—469,402	—475,752
Great Northern	July	8,328	5,614,587	485,241	6,694,852	1,149,191	1,137,244	170,719	2,031,566	202,643	4,770,122	71.3	1,924,730	1,375,949	1,244,967	1,581,185
	7 mos.	8,356	30,762,382	2,322,374	36,496,523	5,217,068	6,927,340	1,174,610	12,372,286	1,371,906	27,433,177	75.2	9,063,346	5,264,841	4,420,688	3,037,703
Green Bay & Western	July	233	70,518	1,156	76,656	22,851	15,030	5,416	37,522	3,045	83,863	109.4	—7,207	—12,269	—13,024	22,279
	7 mos.	233	571,078	6,497	606,399	134,064	131,146	32,210	275,569	19,333	592,129	97.6	14,270	—23,600	—34,752	32,099
Gulf & Ship Island	July	259	54,656	9,368	74,382	14,342	13,619	2,819	42,177	4,477	77,432	104.1	—3,050	—18,634	—26,373	—15,751
	7 mos.	261	543,505	49,587	687,487	104,812	105,293	17,161	317,897	32,973	579,475	84.3	108,012	—1,804	—72,540	—87,284

Continued on next left-hand page

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Revenues and Expenses of Railways

FOR MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1933
Gulf, Mobile & Northern	July	961	$354,754	$22,419	$394,556	$58,205	$67,314	$34,883	$130,016	$24,442	$310,394	78.67	$84,162	$53,155	$8,773	$107,902
	7 mos.	961	2,816,197	123,765	3,081,065	394,521	446,250	241,774	947,628	164,738	2,190,958	71.11	890,107	673,022	316,262	384,426
Illinois Central	July	5,010	5,406,336	756,665	6,645,584	661,345	1,421,187	199,016	2,446,925	323,013	5,080,131	76.4	1,565,453	1,146,766	868,700	1,808,980
	7 mos.	5,011	36,537,140	4,537,154	45,265,490	3,760,148	9,263,455	1,234,534	17,031,112	2,248,477	33,759,426	74.6	11,506,064	8,478,164	7,059,636	8,077,906
Yazoo & Mississippi Valley	July	1,636	764,275	66,773	891,974	102,059	169,126	29,441	398,407	50,985	749,887	84.1	142,087	37,926	—65,260	52,473
	7 mos.	1,642	5,542,441	399,022	6,453,666	522,608	1,040,095	176,702	2,766,763	351,561	4,860,643	75.3	1,593,023	849,591	192,702	428,820
Illinois Central System	July	6,647	6,170,611	823,438	7,537,558	763,404	1,590,313	228,457	2,845,332	373,998	5,830,018	77.3	1,707,540	1,182,781	813,618	1,871,367
	7 mos.	6,653	42,079,581	4,936,176	51,719,156	4,282,756	10,303,550	1,411,236	19,797,875	2,600,038	38,620,069	74.7	13,099,087	9,314,107	7,321,095	8,572,774
Illinois Terminal	July	525	321,657	52,047	407,457	48,638	60,735	14,750	162,236	15,503	301,215	73.93	106,242	79,414	66,583	92,332
	7 mos.	525	2,251,190	392,075	2,842,369	335,835	417,643	102,489	1,022,789	111,107	1,993,734	70.14	848,635	667,491	540,778	414,750
Kansas City Southern System	July	882	684,752	22,474	801,897	80,522	144,175	47,933	262,101	69,707	605,479	75.5	196,418	136,086	95,993	113,876
	7 mos.	882	4,851,377	115,016	5,631,957	541,441	949,997	331,150	1,813,360	485,717	4,129,503	73.3	1,502,454	1,063,333	777,614	621,247
Kansas, Oklahoma & Gulf	July	326	160,952	366	164,046	22,514	10,773	7,437	38,650	8,529	80,391	49.0	83,655	68,337	53,753	40,762
	7 mos.	326	1,086,010	2,580	1,108,811	120,821	91,638	51,227	257,965	57,411	552,752	49.9	556,059	458,894	344,593	245,761
Lake Superior & Ishpeming	July	160	178,315	132	207,747	33,428	18,819	947	33,279	5,791	92,185	44.4	115,562	88,854	87,664	197,014
	7 mos.	160	655,522	1,042	751,257	166,717	135,981	4,392	171,012	40,197	518,220	69.0	233,037	121,858	107,639	135,710
Lehigh & Hudson River	July	96	107,878	324	109,896	14,278	19,156	2,898	38,345	8,376	83,053	75.6	26,843	16,633	5,180	28,571
	7 mos.	96	841,496	1,406	868,563	104,736	151,449	22,745	289,321	46,750	615,001	70.8	253,562	182,749	96,376	101,151
Lehigh & New England	July	227	260,946	549	264,438	41,325	58,242	4,781	95,819	15,470	215,633	81.5	48,805	40,445	47,657	81,917
	7 mos.	227	2,066,017	3,413	2,085,961	243,736	461,756	35,909	691,034	103,593	1,535,910	73.6	550,051	465,579	481,663	362,101
Lehigh Valley	July	1,353	2,558,473	226,198	3,030,109	355,946	634,990	109,862	1,436,888	135,785	2,695,993	89.0	334,116	155,187	27,834	537,482
	7 mos.	1,353	20,992,134	1,395,261	24,108,630	1,898,739	4,263,511	766,348	10,431,489	889,535	18,360,786	76.2	5,747,844	4,398,174	3,319,381	1,558,728
Louisiana & Arkansas	July	608	345,602	10,353	381,782	44,129	72,609	25,660	90,050	18,085	251,162	65.8	130,620	90,142	76,405	72,701
	7 mos.	608	2,243,832	58,038	2,488,539	314,060	420,873	168,080	613,439	129,323	1,648,128	66.2	840,411	611,522	546,927	501,660
Louisiana, Arkansas & Texas	July	255	71,915	409	77,045	20,484	8,712	5,141	25,194	4,402	63,930	83.0	13,115	10,586	—4,437	8,377
	7 mos.	255	520,814	1,966	556,522	117,061	63,535	31,556	186,130	30,178	428,457	77.0	128,065	110,529	9,189	—22,557
Louisville & Nashville	July	5,062	4,520,310	457,731	5,431,882	766,564	1,258,443	168,012	2,036,852	315,485	4,578,713	84.3	853,169	508,944	524,492	1,646,606
	7 mos.	5,068	34,863,562	2,971,134	41,077,657	4,850,183	8,713,954	1,164,150	14,258,927	1,994,218	31,205,959	76.0	9,871,698	7,467,503	7,477,593	5,834,228
Maine Central	July	1,056	622,677	97,797	808,936	140,537	118,132	9,531	316,027	35,617	619,844	76.6	189,092	141,320	118,477	222,703
	7 mos.	1,048	5,224,610	555,725	6,369,812	1,039,917	1,157,165	67,313	2,427,280	255,840	4,947,468	77.7	1,422,344	1,087,900	749,997	1,098,738
Midland Valley	July	363	101,007	390	106,249	14,446	8,710	2,152	27,933	5,945	58,301	54.9	47,948	40,202	33,937	32,334
	7 mos.	363	660,319	2,882	691,147	109,347	76,813	16,337	192,262	43,434	433,873	62.8	257,274	214,714	167,939	207,141
Minneapolis & St. Louis	July	1,627	517,129	19,243	573,962	111,790	117,288	22,687	283,386	33,523	567,743	98.9	6,219	—32,296	—39,356	133,395
	7 mos.	1,627	3,581,263	96,819	3,948,186	549,483	896,753	150,867	1,991,459	231,345	3,813,933	96.6	134,253	—132,656	—258,645	21,010
Minn., St. Paul & S. S. Marie	July	4,303	1,529,304	148,869	1,839,136	281,653	313,769	59,423	772,975	116,438	1,555,027	84.6	284,109	169,201	40,912	325,413
	7 mos.	4,304	10,849,642	608,514	12,525,237	1,792,542	2,504,409	412,043	5,202,133	751,764	10,702,142	85.4	1,823,095	808,771	—40,899	—274,814
Duluth, South Shore & Atlantic	July	555	216,200	10,941	256,878	44,095	35,630	5,080	84,761	6,849	174,509	67.9	82,369	73,382	56,113	67,711
	7 mos.	557	1,131,793	65,616	1,321,330	195,582	268,052	31,558	524,424	40,660	1,056,932	80.0	264,398	183,148	106,584	—72,994
Spokane International	July	163	35,307	1,668	42,839	12,990	6,557	1,993	18,697	3,830	44,043	102.8	—1,204	—5,194	—7,875	—1,713
	7 mos.	163	238,673	10,278	283,036	72,755	36,170	12,137	131,453	28,407	280,882	99.2	2,154	—25,790	—42,061	—88,725
Mississippi Central	July	150	47,331	1,914	51,024	10,826	11,394	6,749	17,577	5,787	52,333	102.6	—1,309	—4,117	—7,201	1,791
	7 mos.	150	348,387	10,038	372,227	64,306	73,118	47,988	114,430	37,709	337,548	90.7	34,679	14,718	—4,416	—28,717
Missouri & North Arkansas	July	364	67,113	1,786	76,832	13,847	9,985	3,277	25,095	3,856	56,060	73.0	20,772	18,832	10,035	23,772
	7 mos.	364	510,436	9,111	571,033	137,946	75,014	23,243	194,934	26,451	457,338	80.1	113,695	100,997	34,073	—28,938
Missouri-Illinois	July	213	79,055	731	81,290	24,769	12,515	2,581	26,303	5,468	71,617	88.1	9,673	3,968	—5,520	10,751
	7 mos.	213	532,737	3,150	547,909	114,604	72,084	17,783	176,572	38,523	419,500	76.6	128,409	91,288	44,284	—21,117
Missouri-Kansas-Texas Lines	July	3,293	1,979,499	154,837	2,356,880	263,143	369,306	125,924	790,994	126,484	1,693,781	71.9	663,099	475,381	297,737	323,221
	7 mos.	3,293	12,772,712	1,071,883	15,446,450	1,919,959	2,637,850	782,364	5,420,983	943,056	11,812,570	76.5	3,633,880	2,396,315	1,106,002	268,108
Missouri Pacific	July	7,357	5,650,323	375,560	6,539,866	993,484	1,351,304	230,433	2,226,278	262,144	5,093,683	77.9	1,446,183	1,112,401	648,935	1,433,163
	7 mos.	7,360	36,555,961	2,166,106	42,606,350	5,727,679	8,867,905	1,513,434	14,817,938	1,764,968	32,817,138	77.0	9,789,212	7,450,904	4,540,905	3,883,920
Gulf Coast Lines	July	1,763	549,189	34,998	643,664	116,543	147,363	41,400	214,622	46,098	566,489	88.01	77,175	27,896	15,592	449
	7 mos.	1,764	5,553,073	225,038	6,177,768	885,246	1,022,567	291,669	1,815,848	316,530	4,324,876	70.01	1,852,892	1,512,413	839,728	223,126
International-Great Northern	July	1,159	901,548	65,448	1,072,745	140,979	179,168	27,121	398,925	42,181	797,936	74.38	274,809	237,835	120,555	205,273
	7 mos.	1,159	6,348,134	357,095	7,377,613	916,633	1,189,039	195,273	2,664,604	296,950	5,323,157	72.15	2,054,456	1,805,772	930,143	1,175,684
San Antonio, Uvalde & Gulf	July	316	59,375	3,034	68,628	20,560	8,622	4,162	22,967	4,310	60,609	88.3	8,019	3,748	—16,544	—5,830
	7 mos.	316	590,556	19,434	657,150	126,229	65,113	29,083	202,972	29,664	452,920	68.9	204,230	177,361	34,649	—102,835
Mobile & Ohio	July	1,201	615,058	33,744	688,788	101,534	166,613	40,324	259,673	36,508	604,542	87.8	84,246	51,737	—10,844	62,876
	7 mos.	1,201	4,633,393	164,134	5,084,532	710,399	1,232,462	278,278	1,846,482	249,671	4,317,204	84.9	767,328	529,856	36,544	104,563
Monongahela	July	177	276,906	853	279,605	31,115	26,762	360	55,645	3,253	117,135	41.9	162,470	138,885	60,098	152,657
	7 mos.	177	2,292,717	6,133	2,314,892	235,350	201,946	2,522	464,094	24,854	927,656	40.1	1,387,236	1,235,481	690,351	598,332

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RAILROAD DIESELS FOR RAILROAD MEN

Actual operating data for one year's operation for two different Alco 600 H. P. Diesel Locomotives on two different railroads

	Loco. #1	Loco. #2
Hours operated	8082	7609
Fuel oil, gals.	47893	39750
Lub. oil, gals.	611	529
Cost of yearly overhaul in Man Hours		
Diesel	194 hrs.	257½ hrs.
Mechanical including wheels turned	265 "	249⅔ "
Electrical	112½ "	61 "
Total Man Hours	571½ "	568⅛ "

Work done in two different shops, requiring no more facilities than are on any railroad at the present time.

This advertisement (No. 11 of a series) presents another of the many factors which, all combined, make the Alco Diesel an outstanding purchase.

AMERICAN LOCOMOTIVE COMPANY

ALCO DIESEL

30 CHURCH STREET · NEW YORK · N.Y.

Revenues and Expenses of Railways

FOR MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1933
Montour	July	57	$172,091	.....	$172,726	$16,287	$32,424	$1,131	$32,897	$6,289	$89,028	51.5	$83,698	$62,765	$79,914	$116,544
	7 mos.	57	1,058,292	$3	1,061,581	94,263	327,529	7,312	226,793	40,423	696,320	65.6	365,261	287,072	404,389	512,067
Nashville, Chatt. & St. Louis	July	1,203	860,832	78,913	1,023,722	149,997	244,010	56,601	413,565	53,768	922,773	90.1	100,949	61,346	39,947	225,619
	7 mos.	1,203	6,336,858	496,302	7,622,132	1,009,979	1,705,361	385,458	2,899,609	389,400	6,420,862	84.2	1,201,270	940,963	747,750	869,598
Nevada Northern	July	165	31,731	387	36,150	8,262	3,476	645	7,127	3,501	23,011	63.6	13,139	6,201	9,675	2,627
	7 mos.	165	160,765	6,421	194,721	58,883	19,724	4,719	48,063	22,713	154,012	79.1	40,619	—5,484	22,065	—36,558
New York Central	July	11,411	16,073,428	5,091,394	23,824,080	2,876,390	4,727,869	559,776	9,163,259	1,021,292	18,681,966	78.4	5,142,114	3,161,671	1,825,455	4,580,713
	7 mos.	11,411	123,015,240	31,378,666	175,344,723	16,876,885	35,978,979	3,615,625	64,373,273	7,140,229	130,259,819	74.3	45,084,904	28,835,375	18,993,139	17,368,135
Pittsburgh & Lake Erie	July	233	1,216,331	48,887	1,301,676	121,135	430,061	24,930	439,947	63,523	1,086,886	83.5	214,790	133,722	289,461	548,737
	7 mos.	233	8,688,627	334,530	9,324,725	708,999	3,015,635	172,039	3,101,882	455,830	7,495,940	80.4	1,828,785	1,186,275	2,209,950	1,558,126
New York, Chicago & St. Louis	July	1,691	2,388,620	106,249	2,584,843	330,064	397,313	103,400	970,298	123,011	1,908,673	73.8	676,170	526,200	239,774	783,635
	7 mos.	1,691	18,675,498	460,044	19,816,636	1,964,299	2,932,877	697,577	6,778,335	854,497	13,195,801	66.6	6,620,835	5,588,029	3,612,221	2,880,329
N. Y., New Haven & Hartford	July	2,072	3,127,360	1,710,456	5,403,374	649,542	1,008,075	84,700	2,208,462	248,938	4,316,196	79.9	1,087,178	711,375	168,362	1,075,651
	7 mos.	2,068	23,912,304	12,489,048	41,194,928	4,721,060	7,286,195	512,459	15,932,017	1,615,539	30,986,258	75.2	10,208,670	7,638,954	3,872,636	3,872,508
New York Connecting	July	20	196,895	.....	201,411	11,274	7,826	.....	28,391	954	48,445	24.1	152,966	119,766	74,733	171,964
	7 mos.	20	1,540,605	.....	1,623,870	72,198	52,278	.....	199,079	6,875	330,430	20.3	1,293,440	1,059,510	781,485	903,063
New York, Ontario & Western	July	568	672,057	132,016	881,075	114,642	139,821	11,313	325,975	23,811	617,499	70.1	263,576	218,575	165,926	216,221
	7 mos.	568	4,979,872	221,250	5,721,652	586,700	1,025,882	82,777	2,334,744	172,316	4,229,708	73.9	1,491,944	1,173,263	830,781	1,026,176
Norfolk & Western	July	2,184	5,490,737	160,082	5,796,789	687,728	1,385,253	118,952	1,377,832	192,343	3,772,400	65.1	2,024,389	1,324,237	1,488,258	2,900,285
	7 mos.	2,185	40,402,338	982,829	42,693,906	4,367,517	9,671,656	790,441	9,609,179	1,345,036	25,869,909	60.6	16,823,997	11,961,136	13,083,468	11,401,777
Norfolk Southern	July	932	383,622	15,407	414,496	68,089	46,080	20,873	146,393	22,051	303,486	73.2	111,010	84,899	55,617	15,521
	7 mos.	932	2,702,332	67,880	2,896,101	465,069	347,989	131,899	983,277	155,323	2,083,557	71.9	812,544	627,321	415,732	—2,548
Northern Pacific	July	6,745	3,692,226	412,974	4,545,445	534,203	991,484	155,972	1,697,299	257,555	3,713,923	81.7	831,522	343,328	672,835	834,691
	7 mos.	6,745	22,699,845	1,907,969	27,280,701	3,195,981	6,019,524	1,060,907	10,731,865	1,792,516	23,201,904	85.1	4,078,797	705,439	2,774,998	111,797
Northwestern Pacific	July	386	269,454	101,738	409,077	40,192	52,494	4,271	166,682	14,490	277,936	67.9	131,141	115,852	99,278	49,856
	7 mos.	386	1,089,155	557,010	1,869,270	267,645	316,047	29,662	954,033	96,171	1,662,310	88.9	206,960	90,196	15,286	—272,994
Oklahoma City-Ada-Atoka	July	132	23,477	336	25,645	4,549	3,999	628	9,661	1,706	20,543	80.1	5,102	2,382	—4,972	—2,361
	7 mos.	132	186,222	2,184	200,530	33,788	12,229	4,584	70,644	10,979	131,560	65.6	68,970	48,177	347	—5,615
Pennsylvania Railroad	July	10,511	21,521,692	4,765,850	28,985,514	2,739,472	5,678,875	600,203	10,569,204	1,377,506	21,204,336	73.2	7,781,178	5,401,459	4,411,158	6,982,311
	7 mos.	10,511	151,777,435	33,475,875	205,362,973	18,936,981	41,053,045	3,896,198	73,034,417	9,371,948	148,598,576	72.4	56,764,397	42,113,038	36,126,216	32,628,639
Long Island	July	400	413,032	1,905,408	2,405,111	191,925	325,104	16,399	935,159	54,896	1,524,044	63.4	881,067	531,592	353,831	620,066
	7 mos.	400	3,389,403	10,116,799	14,178,942	1,317,887	2,224,799	95,547	6,387,426	388,479	10,414,263	73.4	3,764,679	2,340,527	1,154,105	2,196,724
Pere Marquette	July	2,229	1,734,772	98,061	1,959,915	269,644	440,907	56,724	755,676	91,240	1,618,588	82.6	341,327	247,294	160,510	327,797
	7 mos.	2,239	13,957,753	417,484	15,215,601	1,619,802	3,201,781	403,152	5,632,136	619,831	11,500,756	75.6	3,714,845	3,027,880	2,285,290	770,891
Pittsburg & Shawmut	July	101	39,376	133	40,248	9,021	13,321	1,377	13,425	Cr. 1,823	35,321	87.8	4,927	4,224	11,205	21,904
	7 mos.	101	387,634	3,232	395,870	67,839	122,241	9,537	120,955	19,727	340,299	86.0	55,571	51,595	87,248	35,975
Pittsburgh & West Virginia	July	138	191,591	.....	201,081	23,442	60,082	15,165	46,366	13,067	166,711	82.9	34,370	11,429	28,288	160,363
	7 mos.	138	1,591,341	.....	1,659,714	143,859	443,834	98,413	335,849	94,312	1,171,881	70.6	487,833	329,411	535,235	517,130
Pittsburg, Shawmut & Northern	July	195	46,470	170	47,982	22,785	15,433	1,595	24,352	6,236	70,401	146.7	—22,419	—24,587	—29,745	9,484
	7 mos.	195	548,480	1,227	570,830	136,793	142,284	9,350	204,425	43,721	536,573	94.0	34,257	18,311	—19,725	15,223
Reading	July	1,461	3,388,338	236,884	3,820,612	360,273	796,611	73,287	1,539,464	191,871	2,979,093	78.0	841,519	642,569	661,269	1,577,612
	7 mos.	1,461	29,151,506	1,742,670	32,426,950	2,301,849	6,104,335	503,729	11,775,736	1,335,569	22,141,511	68.3	10,285,439	7,951,956	8,035,967	6,970,966
Pennsylvania-Reading Seashore Lines	July	411	201,241	551,201	781,078	44,961	101,407	12,846	383,594	27,442	570,186	73.0	210,892	92,355	—56,882	—108,628
	7 mos.	411	1,591,773	1,449,004	3,215,594	315,976	511,266	59,740	2,149,057	179,538	3,209,262	99.8	6,332	—536,282	—1,243,438	—534,801
Richmond, Fredericksburg & Potomac	July	117	250,738	108,723	426,701	56,010	106,665	8,550	190,830	29,753	397,430	93.1	29,271	12,196	—23,777	—11,724
	7 mos.	117	2,070,433	966,738	3,851,745	352,858	824,593	57,339	1,490,862	202,926	3,002,426	77.9	849,319	651,459	339,230	376,389
Rutland	July	413	186,246	30,906	275,003	58,934	50,304	10,254	129,796	14,010	263,298	95.7	11,705	—10,163	—6,487	39,795
	7 mos.	413	1,301,329	219,272	1,910,806	323,451	400,313	72,414	913,039	95,113	1,803,729	94.4	107,077	—33,222	—12,720	122,751
St. Louis-San Francisco	July	5,117	2,863,991	221,560	3,353,855	594,522	814,722	97,044	1,194,038	142,820	2,832,901	84.47	520,954	250,169	227,803	413,536
	7 mos.	5,180	19,929,087	1,346,100	23,290,660	3,784,409	5,398,118	667,102	8,208,937	1,014,792	19,085,086	81.94	4,205,574	2,324,743	2,098,194	1,540,866
Ft. Worth & Rio Grande	July	233	28,747	1,274	37,299	9,127	10,873	2,373	22,961	3,897	49,223	132.0	—11,924	—16,144	—22,642	—32,937
	7 mos.	233	191,049	7,898	245,299	96,467	67,014	16,322	147,636	25,930	353,335	144.0	—108,036	—134,340	—171,772	—236,617
St. Louis, San Francisco & Texas	July	261	92,231	838	95,936	35,591	16,990	4,331	37,565	7,300	101,748	106.1	—5,812	—9,694	—34,920	—14,884
	7 mos.	261	532,109	4,125	558,534	203,960	106,155	31,719	234,697	51,816	627,115	112.3	—68,581	—96,570	—276,759	—236,135
St. Louis, Southwestern Lines	July	1,810	1,238,113	20,196	1,307,539	129,377	170,618	67,206	368,003	67,823	809,458	61.9	498,081	438,762	262,787	242,278
	7 mos.	1,842	8,046,316	115,326	8,551,286	864,107	1,172,201	473,486	2,739,237	421,485	5,712,065	66.8	2,839,221	2,349,834	1,363,836	926,537
San Diego & Arizona Eastern	July	155	35,121	3,003	38,930	11,020	8,928	1,590	14,069	4,048	40,197	103.3	—1,267	—3,531	—1,950	—6,318
	7 mos.	155	249,102	33,614	289,651	67,566	60,919	11,401	111,158	28,756	283,769	98.0	5,882	—6,281	1,247	—24,837
Seaboard Air Line	July	4,308	1,784,538	257,395	2,231,668	414,378	610,782	129,694	947,358	129,317	2,249,736	100.8	—18,068	—176,950	—212,519	172,278
	7 mos.	4,309	16,752,501	1,983,508	20,946,794	3,412,210	4,227,242	919,588	7,254,004	905,829	16,943,795	80.9	4,002,999	2,478,126	1,621,855	1,650,628

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A Net Average Saving of 22½%

IN 21 cases where interlockings were consolidated, net average annual savings of 22½ per cent were reported according to the A. R. A., Signal Section.

Consolidation of two or more interlockings, by controlling their functions from one location, is desirable from many standpoints, particularly in terminal areas. Traffic can be handled at much less cost and better coordination of movements is achieved. » » » » » »

"Union" engineers are available to cooperate with you in determining the engineering and economic phases of interlocking consolidation projects that your operating conditions might require. » » » » » » »

1881 **Union Switch & Signal Co.** 1934

SWISSVALE, PA.

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

Revenues and Expenses of Railways

FOR MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1934—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	General	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income	Net ry. operating income, 1933
Southern Ry.	July	6644	$4,861,231	$675,868	$6,075,935	$848,297	$1,238,066	$137,801	$2,374,865	$245,150	$4,882,281	80.4	$1,193,654	$744,204	$583,007	$2,077,694
	7 mos.	6644	37,168,320	4,504,142	45,818,328	5,969,195	8,435,029	986,360	16,595,795	1,684,418	33,941,664	74.1	11,876,664	8,694,144	7,345,097	8,346,772
Alabama Great Southern	July	315	325,460	48,318	402,631	75,404	92,445	11,112	131,662	13,824	327,024	81.2	75,607	51,898	39,504	103,405
	7 mos.	315	2,331,825	288,461	2,850,806	508,529	618,671	72,416	935,567	99,793	2,251,180	79.0	599,626	422,957	388,161	241,860
Cinn., New Orleans & Texas Pacific	July	336	999,764	68,141	1,119,576	126,093	194,437	25,849	283,665	35,026	668,941	59.7	450,635	382,354	326,945	486,955
	7 mos.	336	6,587,215	453,815	7,463,062	877,998	1,298,236	162,636	1,895,442	245,993	4,510,926	60.4	2,952,136	2,450,104	2,131,467	1,975,749
Georgia Southern & Florida	July	397	135,784	23,365	173,186	30,708	33,453	1,507	72,553	2,804	142,867	82.5	30,319	16,739	21,132	10,542
	7 mos.	397	829,930	185,614	1,147,167	200,737	257,985	11,845	497,838	16,741	1,000,091	87.2	147,076	55,750	90,512	27,266
New Orleans & Northeastern	July	204	149,855	16,917	179,288	25,893	33,818	5,605	57,331	7,867	131,955	73.6	47,333	22,137	7,932	—10,977
	7 mos.	204	1,065,774	123,176	1,285,153	181,834	242,430	37,967	444,424	59,583	976,048	75.9	309,105	147,028	41,758	—238,204
Northern Alabama	July	99	38,900	2,318	42,640	9,950	1,331	1,150	14,813	1,640	28,884	67.7	13,756	10,445	—471	7,051
	7 mos.	99	294,924	11,527	318,275	76,334	10,089	7,764	105,353	11,355	210,043	66.0	108,232	86,025	15,729	—13,668
Southern Pacific	July	8,798	8,769,449	1,480,432	11,113,981	986,115	1,759,155	265,237	3,794,976	565,854	7,566,282	68.1	3,547,699	2,730,307	2,228,779	1,462,773
	7 mos.	8,857	49,456,337	9,060,424	64,594,591	6,696,846	11,025,031	1,884,531	22,324,919	3,696,635	46,817,282	72.5	17,777,309	11,960,234	9,287,592	2,062,614
So. Pac. Steamship Lines	July	...	369,076	22,231	399,841	16,170	103,405	15,907	316,076	18,026	469,584	117.4	—69,743	—70,366	—70,498	—6,674
	7 mos.	...	2,385,865	91,477	2,560,452	110,097	775,965	111,842	1,876,924	138,534	3,013,362	117.7	—452,910	—457,639	—455,406	—383,678
Texas & New Orleans	July	4,447	2,000,132	217,330	2,515,393	431,987	660,724	110,790	949,914	206,169	2,368,417	94.2	146,976	—95,247	—281,829	26,249
	7 mos.	4,473	14,470,668	1,394,657	18,045,015	2,809,800	4,250,949	779,236	6,232,706	1,405,467	15,553,636	86.2	2,491,379	896,571	—539,258	—680,696
Spokane, Portland & Seattle	July	552	436,150	49,315	520,818	61,152	87,265	6,198	193,769	14,365	364,917	70.1	155,901	98,141	68,798	166,937
	7 mos.	552	2,709,295	261,133	3,213,704	282,264	415,795	39,646	1,000,362	98,466	1,849,008	57.5	1,364,696	959,162	785,819	310,538
Tennessee Central	July	287	156,092	7,037	172,730	25,860	22,419	5,017	55,186	11,114	119,541	69.2	53,189	47,800	34,761	32,414
	7 mos.	287	1,113,441	36,171	1,218,327	190,430	175,658	36,112	407,268	73,626	881,933	72.4	336,394	306,361	208,096	126,338
Texas & Pacific	July	1,950	1,573,837	171,079	1,940,452	211,901	324,176	66,315	542,869	109,373	1,272,122	65.6	668,330	552,962	409,035	374,785
	7 mos.	1,950	10,135,357	1,075,964	12,658,249	1,285,260	2,184,796	448,116	3,685,116	763,231	8,474,621	66.9	4,183,628	3,426,279	2,600,349	1,859,177
Texas Mexican	July	162	60,896	180	68,355	12,834	10,641	2,996	27,253	6,565	60,289	88.2	8,066	3,703	1,027	—1,441
	7 mos.	162	471,152	2,535	518,712	72,242	85,020	20,758	177,896	46,107	401,180	77.3	117,532	87,045	57,397	—66,831
Toledo, Peoria & Western	July	239	172,034	9	174,378	44,029	13,307	15,347	46,132	7,223	126,038	72.3	48,340	39,587	23,555	52,845
	7 mos.	239	964,890	118	979,655	254,016	83,436	103,828	288,197	63,144	792,621	80.9	187,034	162,679	67,221	131,858
Union Pacific	July	3,767	4,781,558	536,709	5,798,185	583,690	1,064,526	118,376	1,720,369	261,094	3,841,484	66.3	1,956,701	1,491,688	1,169,866	1,357,006
	7 mos.	3,767	29,884,184	2,869,586	36,157,499	3,509,930	8,492,752	822,975	10,939,261	1,836,452	26,089,788	72.2	10,067,711	6,898,866	5,308,303	6,389,575
Oregon-Short Line	July	2,504	1,300,170	127,163	1,541,897	284,095	237,674	33,449	529,269	86,902	1,193,741	77.4	348,156	121,154	44,305	186,750
	7 mos.	2,504	9,305,873	671,635	10,906,389	1,480,969	1,836,087	218,412	3,542,136	607,339	7,920,376	72.6	2,986,013	1,396,517	884,382	825,386
Oregon-Wash. R. R. & Nav. Co.	July	2,294	925,206	130,271	1,199,922	209,350	160,791	48,212	446,260	81,537	954,733	79.6	245,189	105,179	—636	144,428
	7 mos.	2,295	6,612,093	684,110	8,226,372	1,559,238	1,196,420	332,486	3,034,335	580,030	6,744,559	82.0	1,481,813	529,338	—148,696	—636,529
Los Angeles & Salt Lake	July	1,241	1,149,279	165,272	1,429,642	134,699	190,962	42,104	405,755	55,588	867,430	60.7	562,212	442,208	307,096	138,148
	7 mos.	1,241	7,771,655	868,667	9,374,006	1,087,087	1,353,292	302,614	2,662,434	382,623	5,995,576	64.0	3,378,430	2,534,983	1,710,483	514,511
St. Joseph & Grand Island	July	258	208,626	3,022	219,038	37,570	25,173	2,395	70,921	11,531	148,575	67.8	70,463	57,370	24,220	61,666
	7 mos.	258	1,523,311	13,075	1,584,988	212,380	164,789	15,202	468,249	78,728	944,335	59.6	640,653	531,528	325,051	265,029
Utah	July	111	29,923	.....	30,127	10,217	14,251	475	8,691	4,639	38,273	127.0	—8,146	—13,160	—22,732	—15,785
	7 mos.	111	307,384	.....	308,207	62,650	110,360	3,763	79,601	34,927	291,301	94.5	16,906	—27,693	—100,364	36,570
Virginian	July	619	1,121,689	4,535	1,162,321	114,135	199,144	16,646	206,514	27,682	562,345	48.4	599,976	459,976	524,896	592,640
	7 mos.	619	7,849,021	36,216	8,182,578	722,289	1,478,166	114,156	1,467,810	174,040	3,951,888	48.3	4,230,690	3,230,683	3,666,819	3,234,786
Wabash	July	2,457	2,883,938	191,631	3,250,333	471,832	491,386	135,925	1,225,339	128,337	2,463,474	75.8	786,859	656,373	306,777	505,522
	7 mos.	2,457	20,150,031	1,134,854	22,744,192	2,751,373	3,651,292	928,981	8,475,163	863,066	16,707,107	73.5	6,037,085	5,113,389	2,673,225	773,188
Ann Arbor	July	293	277,309	4,319	297,974	27,822	54,424	11,529	119,478	11,340	225,160	75.6	72,814	62,347	43,920	52,927
	7 mos.	293	1,860,738	19,617	1,941,943	166,892	347,201	75,275	818,006	72,524	1,480,759	76.3	461,184	364,783	234,116	57,436
Western Maryland	July	889	1,055,400	17,781	1,103,728	168,426	247,855	38,177	291,220	47,690	800,970	72.6	302,758	232,758	291,435	418,144
	7 mos.	891	7,865,171	60,529	8,150,206	1,078,507	1,829,855	240,998	2,064,963	283,984	5,512,672	67.6	2,637,534	2,117,534	2,390,710	2,020,683
Western Pacific	July	1,213	1,090,686	38,046	1,184,991	184,808	164,205	68,660	391,764	34,528	879,196	74.2	305,795	235,088	185,058	93,298
	7 mos.	1,213	5,949,803	151,068	6,417,693	991,301	1,100,156	377,263	2,299,505	251,945	5,178,390	80.7	1,239,303	753,520	598,833	—122,962
Wheeling & Lake Erie	July	511	858,354	1,556	931,228	114,675	305,830	29,701	297,728	28,755	776,629	83.4	154,599	85,503	73,519	318,484
	7 mos.	511	6,581,118	10,791	6,995,547	658,880	2,094,903	199,313	2,045,897	196,202	5,194,042	74.2	1,801,505	1,193,819	1,103,069	860,413
Wichita Falls & Southern	July	203	34,157	44	42,323	9,473	6,470	1,496	12,270	3,818	33,527	79.22	8,796	5,908	3,606	10,731
	7 mos.	203	280,825	314	320,395	65,483	47,600	12,044	90,487	23,018	238,632	74.48	81,763	61,412	40,424	36,855